CONSTRUCTION CONTRACT

CP240049 - GENERAL VANG PAO PARK

1. **Parties and Date**.

This Contract is made and entered into this _____ day of _____, _____ by and between the City of Merced, a California Charter Municipal Corporation of the State of California ("City") and **Stockbridge General Contracting, Inc., a California Stock Corporation** with its principal place of business at **2972 Larkin Ave, Clovis, CA 93612** ("Contractor"). City and Contractor are sometimes individually referred to as "Party" and collectively as "Parties" in this Contract.

2. **Recitals.**

2.1 City. City is a California Charter Municipal Corporation organized under the laws of the State of California, with power to contract for services necessary to achieve its purpose.

2.2 Contractor. Contractor desires to perform and assume responsibility for the provision of certain construction services required by the City on the terms and conditions set forth in this Contract. Contractor represents that it is duly licensed and experienced in providing services such as construction of, but is not limited to, earth work, installing concrete pathways, installing pour-in-place rubber surfacing, installing engineered fiber, irrigation, underground utilities, and installing prepurchase playground equipment. The following license classifications are required for this Project: Class A

2.3 Project. City desires to engage Contractor to render such services for the **CP240049 - GENERAL VANG PAO PARK** as set forth in this Contract.

2.4 Project Documents & Certifications. Contractor has obtained, and delivers concurrently herewith, a performance bond, a payment bond, and all insurance documentation, as required by the Contract.

3. **Terms**

3.1 Incorporation of Documents. This Contract includes and hereby incorporates in full by reference the following documents, including all exhibits, drawings, specifications and documents therein, and attachments and addenda thereto:

- Services/Schedule (Exhibit "A")
- Plans and Specifications (Exhibit "B")
- Special Conditions (Exhibit "C")
- Contractor's Certificate Regarding Workers' Compensation (Exhibit "D")
- Public Works Contractor Registration Certification (Exhibit "E")
- Payment and Performance Bonds (Exhibit "F")
- Addenda
- Change Orders executed by the City

- Latest Edition of the Standard Specifications for Public Works Construction (Green Book), Excluding Sections 1-9
- Notice Inviting Bids, if any
- Instructions to Bidders, if any
- Contractor's Bid

3.2 Contractor's Basic Obligation; Scope of Work. Contractor promises and agrees, at its own cost and expense, to furnish to the City all labor, materials, tools, equipment, services, and incidental and customary work necessary to fully and adequately complete the Project, including all structures and facilities necessary for the Project or described in the Contract (hereinafter sometimes referred to as the "Work"), for a Total Contract Price as specified pursuant to this Contract. All Work shall be subject to, and performed in accordance with the above referenced documents, as well as the exhibits attached hereto and incorporated herein by reference. The plans and specifications for the Work are further described in Exhibit "B" attached hereto and incorporated herein by this reference. Special Conditions, if any, relating to the Work are described in Exhibit "C" attached hereto and incorporated herein by this reference.

3.2.1 Change in Scope of Work. Any change in the scope of the Work, method of performance, nature of materials or price thereof, or any other matter materially affecting the performance or nature of the Work shall not be paid for or accepted unless such change, addition or deletion is approved in writing by a valid change order executed by the City. Should Contractor request a change order due to unforeseen circumstances affecting the performance of the Work, such request shall be made within five (5) business days of the date such circumstances are discovered or shall waive its right to request a change order due to such circumstances. If the Parties cannot agree on any change in price required by such change in the Work, the City may direct the Contractor to proceed with the performance of the change on a time and materials basis.

3.2.2 Substitutions/"Or Equal". Pursuant to Public Contract Code Section 3400(b), the City may make a finding that designates certain products, things, or services by specific brand or trade name. Unless specifically designated in this Contract, whenever any material, process, or article is indicated or specified by grade, patent, or proprietary name or by name of manufacturer, such Specifications shall be deemed to be used for the purpose of facilitating the description of the material, process or article desired and shall be deemed to be followed by the words "or equal."

Contractor may, unless otherwise stated, offer for substitution any material, process or article which shall be substantially equal or better in every respect to that so indicated or specified in this Contract. However, the City may have adopted certain uniform standards for certain materials, processes and articles. Contractor shall submit requests, together with substantiating data, for substitution of any "or equal" material, process or article no later than thirty-five (35) days after award of the Contract. To facilitate the construction schedule and sequencing, some requests may need to be submitted before thirty-five (35) days after award of Contract. Provisions regarding submission of "or equal" requests shall not in any way authorize an extension of time for performance of this Contract. If a proposed "or equal" substitution request is rejected, Contractor shall be responsible for providing the specified material, process or article. The burden of proof as to the equality of any material, process or article shall rest with Contractor.

The City has the complete and sole discretion to determine if a material, process or article is an "or equal" material, process or article that may be substituted. Data required to substantiate requests for substitutions of an "or equal" material, process or article data shall include a signed affidavit from Contractor stating that, and describing how, the substituted "or equal"

material, process or article is equivalent to that specified in every way except as listed on the affidavit. Substantiating data shall include any and all illustrations, specifications, and other relevant data including catalog information which describes the requested substituted "or equal" material, process or article, and substantiates that it is an "or equal" to the material, process or article. The substantiating data must also include information regarding the durability and lifecycle cost of the requested substituted "or equal" material, process or article. Failure to submit all the required substantiating data, including the signed affidavit, to the City in a timely fashion will result in the rejection of the proposed substitution.

Contractor shall bear all of the City's costs associated with the review of substitution requests. Contractor shall be responsible for all costs related to a substituted "or equal" material, process or article. Contractor is directed to the Special Conditions (if any) to review any findings made pursuant to Public Contract Code section 3400.

3.3 Period of Performance and Liquidated Damages. Contractor shall perform and complete all Work under this Contract within **65 working days**, beginning the effective date of the Notice to Proceed ("Contract Time"). Contractor shall perform its Work in strict accordance with any completion schedule, construction schedule or project milestones developed by the City. Such schedules or milestones may be included as part of Exhibits "A" or "B" attached hereto or may be provided separately in writing to Contractor. Contractor agrees that if such Work is not completed within the aforementioned Contract Time and/or pursuant to any such completion schedule, construction schedule or project milestones developed pursuant to provisions of the Contract, it is understood, acknowledged and agreed that the City will suffer damage. Pursuant to Government Code Section 53069.85, Contractor shall pay to the City as fixed and liquidated damages the sum of **$2,500 per day** for each and every calendar day of delay beyond the Contract Time or beyond any completion schedule, construction schedule or Project milestones established pursuant to the Contract.

3.4 Standard of Performance; Performance of Employees. Contractor shall perform all Work under this Contract in a skillful and workmanlike manner, and consistent with the standards generally recognized as being employed by professionals in the same discipline in the State of California. Contractor represents and maintains that it is skilled in the professional calling necessary to perform the Work. Contractor warrants that all employees and subcontractors shall have sufficient skill and experience to perform the Work assigned to them. Finally, Contractor represents that it, its employees and subcontractors have all licenses, permits, qualifications and approvals of whatever nature that are legally required to perform the Work, including any required business license, and that such licenses and approvals shall be maintained throughout the term of this Contract. As provided for in the indemnification provisions of this Contract, Contractor shall perform, at its own cost and expense and without reimbursement from the City, any work necessary to correct errors or omissions which are caused by Contractor's failure to comply with the standard of care provided for herein. Any employee who is determined by the City to be uncooperative, incompetent, a threat to the safety of persons or the Work, or any employee who fails or refuses to perform the Work in a manner acceptable to the City, shall be promptly removed from the Project by Contractor and shall not be re-employed on the Work.

3.5 Control and Payment of Subordinates; Contractual Relationship. City retains Contractor on an independent contractor basis and Contractor is not an employee of City. Any additional personnel performing the work governed by this Contract on behalf of Contractor shall at all times be under Contractor's exclusive direction and control. Contractor shall pay all wages, salaries, and other amounts due such personnel in connection with their performance under this Contract and as required by law. Contractor shall be responsible for all reports and obligations

respecting such additional personnel, including, but not limited to: social security taxes, income tax withholding, unemployment insurance, and workers' compensation insurance.

3.6 City's Basic Obligation. City agrees to engage and does hereby engage Contractor as an independent contractor to furnish all materials and to perform all Work according to the terms and conditions herein contained for the sum set forth above. Except as otherwise provided in the Contract, the City shall pay to Contractor, as full consideration for the satisfactory performance by Contractor of the services and obligations required by this Contract, the below-referenced compensation in accordance with compensation provisions set forth in the Contract.

3.7 Compensation and Payment.

3.7.1 Amount of Compensation. As consideration for performance of the Work required herein, City agrees to pay Contractor the Total Contract Price of **Nine Hundred Eighty Six Thousand Nine Hundred Seventy Seven Dollars** (**$986,977.00**) ("Total Contract Price") provided that such amount shall be subject to adjustment pursuant to the applicable terms of this Contract or written change orders approved and signed in advance by the City.

3.7.2 Payment of Compensation. If the Work is scheduled for completion in thirty (30) or less calendar days, City will arrange for payment of the Total Contract Price upon completion and approval by City of the Work. If the Work is scheduled for completion in more than thirty (30) calendar days, City will pay Contractor on a monthly basis as provided for herein. On or before the fifth (5th) day of each month, Contractor shall submit to the City an itemized application for payment in the format supplied by the City indicating the amount of Work completed since commencement of the Work or since the last progress payment. These applications shall be supported by evidence which is required by this Contract and such other documentation as the City may require. The Contractor shall certify that the Work for which payment is requested has been done and that the materials listed are stored where indicated. Contractor may be required to furnish a detailed schedule of values upon request of the City and in such detail and form as the City shall request, showing the quantities, unit prices, overhead, profit, and all other expenses involved in order to provide a basis for determining the amount of progress payments.

3.7.3 Prompt Payment. City shall review and pay all progress payment requests in accordance with the provisions set forth in Section 20104.50 of the California Public Contract Code. However, no progress payments will be made for Work not completed in accordance with this Contract. Contractor shall comply with all applicable laws, rules and regulations relating to the proper payment of its employees, subcontractors, suppliers, or others.

3.7.4 Contract Retentions. From each approved progress estimate, five percent (5%) will be deducted and retained by the City, and the remainder will be paid to Contractor. All Contract retention shall be released and paid to Contractor and subcontractors pursuant to California Public Contract Code Section 7107.

3.7.5 Other Retentions. In addition to Contract retentions, the City may deduct from each progress payment an amount necessary to protect City from loss because of: (1) liquidated damages which have accrued as of the date of the application for payment; (2) any sums expended by the City in performing any of Contractor's obligations under the Contract which Contractor has failed to perform or has performed inadequately; (3) defective Work not remedied; (4) stop notices as allowed by state law; (5) reasonable doubt that the Work can be completed for the unpaid balance of the Total Contract Price or within the scheduled completion date; (6) unsatisfactory prosecution of the Work by Contractor; (7) unauthorized deviations from the Contract;

(8) failure of Contractor to maintain or submit on a timely basis proper and sufficient documentation as required by the Contract or by City during the prosecution of the Work; (9) erroneous or false estimates by Contractor of the value of the Work performed; (10) any sums representing expenses, losses, or damages as determined by the City, incurred by the City for which Contractor is liable under the Contract; and (11) any other sums which the City is entitled to recover from Contractor under the terms of the Contract or pursuant to state law, including Section 1727 of the California Labor Code. The failure by the City to deduct any of these sums from a progress payment shall not constitute a waiver of the City's right to such sums.

3.7.6 Substitutions for Contract Retentions. In accordance with California Public Contract Code Section 22300, the City will permit the substitution of securities for any monies withheld by the City to ensure performance under the Contract. At the request and expense of Contractor, securities equivalent to the amount withheld shall be deposited with the City, or with a state or federally chartered bank in California as the escrow agent, and thereafter the City shall then pay such monies to Contractor as they come due. Upon satisfactory completion of the Contract, the securities shall be returned to Contractor. For purposes of this Section and Section 22300 of the Public Contract Code, the term "satisfactory completion of the contract" shall mean the time the City has issued written final acceptance of the Work and filed a Notice of Completion as required by law and provisions of this Contract. Contractor shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon. The escrow agreement used for the purposes of this Section shall be in the form provided by the City.

3.7.7 Title to Work. As security for partial, progress, or other payments, title to Work for which such payments are made shall pass to the City at the time of payment. To the extent that title has not previously been vested in the City by reason of payments, full title shall pass to the City at delivery of the Work at the destination and time specified in this Contract. Such transferred title shall in each case be good, free and clear from any and all security interests, liens, or other encumbrances. Contractor promises and agrees that it will not pledge, hypothecate, or otherwise encumber the items in any manner that would result in any lien, security interest, charge, or claim upon or against said items. Such transfer of title shall not imply acceptance by the City, nor relieve Contractor from the responsibility to strictly comply with the Contract and shall not relieve Contractor of responsibility for any loss of or damage to items.

3.7.8 Labor and Material Releases. Contractor shall furnish City with labor and material releases from all subcontractors performing work on, or furnishing materials for, the Work governed by this Contract prior to final payment by City.

3.7.9 Prevailing Wages. Contractor is aware of the requirements of California Labor Code Section 1720 et seq., and 1770 et seq., as well as California Code of Regulations, Title 8, Section 16000 et seq., ("Prevailing Wage Laws"), which require the payment of prevailing wage rates and the performance of other requirements on "public works" and "maintenance" projects. Since the Services are being performed as part of an applicable "public works" or "maintenance" project, as defined by the Prevailing Wage Laws, and since the total compensation is $1,000 or more, Contractor agrees to fully comply with such Prevailing Wage Laws. City shall provide Contractor with a copy of the prevailing rates of per diem wages in effect at the commencement of this Contract upon request. Contractor shall make copies of the prevailing rates of per diem wages for each craft, classification or type of worker needed to execute the Services available to interested parties upon request and shall post copies at Contractor's principal place of business and at the project site. Contractor shall defend, indemnify and hold the City, its officials, officers, employees and agents free and harmless from any claim or liability arising out of any failure or alleged failure to comply with the Prevailing Wage Laws. Contractor and any subcontractor shall forfeit a penalty

of up to $200 per calendar day or portion thereof for each worker paid less than the prevailing wage rates.

3.7.10 Apprenticeable Crafts. When Contractor employs workmen in an apprenticeable craft or trade, Contractor shall comply with the provisions of Section 1777.5 of the California Labor Code with respect to the employment of properly registered apprentices upon public works. The primary responsibility for compliance with said section for all apprenticeable occupations shall be with Contractor. The Contractor or any subcontractor that is determined by the Labor Commissioner to have knowingly violated Section 1777.5 shall forfeit as a civil penalty an amount not exceeding $100 for each full calendar day of noncompliance, or such greater amount as provided by law.

3.7.11 Hours of Work. Contractor is advised that eight (8) hours labor constitutes a legal day's work. Pursuant to Section 1813 of the California Labor Code, Contractor shall forfeit a penalty of $25.00 per worker for each day that each worker is permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week, except when payment for overtime is made at not less than one and one-half (1-1/2) times the basic rate for that worker.

3.7.12 Payroll Records. Contractor and each subcontractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the public work. The payroll records shall be certified and shall be available for inspection at all reasonable hours at the principal office of Contractor in the manner provided in Labor Code section 1776. In the event of noncompliance with the requirements of this section, Contractor shall have 10 days in which to comply subsequent to receipt of written notice specifying in what respects such Contractor must comply with this section. Should noncompliance still be evident after such 10-day period, Contractor shall, as a penalty to City, forfeit not more than $100.00 for each calendar day or portion thereof, for each worker, until strict compliance is effectuated. The amount of the forfeiture is to be determined by the Labor Commissioner. A contractor who is found to have violated the provisions of law regarding wages on Public Works with the intent to defraud shall be ineligible to bid on Public Works contracts for a period of one to three years as determined by the Labor Commissioner. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, such penalties shall be withheld from progress payments then due. The responsibility for compliance with this section is on Contractor. The requirement to submit certified payroll records directly to the Labor Commissioner under Labor Code section 1771.4 shall not apply to work performed on a public works project that is exempt pursuant to the small project exemption specified in Labor Code Section 1771.4.

3.7.13 Contractor and Subcontractor Registration. Pursuant to Labor Code sections 1725.5 and 1771.1, all contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a contract to perform public work must be registered with the Department of Industrial Relations. No bid will be accepted nor any contract entered into without proof of the contractor's and subcontractors' current registration with the Department of Industrial Relations to perform public work. Contractor is directed to review, fill out and execute the Public Works

Contractor Registration Certification attached hereto as Exhibit "E" prior to contract execution. Notwithstanding the foregoing, the contractor registration requirements mandated by Labor Code Sections 1725.5 and 1771.1 shall not apply to work performed on a public works project that is exempt pursuant to the small project exemption specified in Labor Code Sections 1725.5 and 1771.1.

3.7.14 Labor Compliance; Stop Orders. This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. It shall be the Contractor's sole responsibility to evaluate and pay the cost of complying with all labor compliance requirements under this Contract and applicable law. Any stop orders issued by the Department of Industrial Relations against Contractor or any subcontractor that affect Contractor's performance of Work, including any delay, shall be Contractor's sole responsibility. Any delay arising out of or resulting from such stop orders shall be considered Contractor caused delay subject to any applicable liquidated damages and shall not be compensable by the City. Contractor shall defend, indemnify and hold the City, its officials, officers, employees and agents free and harmless from any claim or liability arising out of stop orders issued by the Department of Industrial Relations against Contractor or any subcontractor.

3.8 Performance of Work; Jobsite Obligations.

3.8.1 Water Quality Management and Compliance.

3.8.1.1 Water Quality Management and Compliance. Contractor shall keep itself and all subcontractors, staff, and employees fully informed of and in compliance with all local, state and federal laws, rules and regulations that may impact, or be implicated by the performance of the Work including, without limitation, all applicable provisions of the Federal Water Pollution Control Act (33 U.S.C. §§ 1300); the California Porter-Cologne Water Quality Control Act (Cal Water Code §§ 13000-14950); local ordinances regulating discharges of storm water; and any and all regulations, policies, or permits issued pursuant to any such authority regulating the discharge of pollutants, as that term is used in the Porter-Cologne Water Quality Control Act, to any ground or surface water in the State.

3.8.1.2 Compliance with the Statewide Construction General Permit. Contractor shall comply with all conditions of the most recent iteration of the National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction Activity, issued by the California State Water Resources Control Board ("Permit"). It shall be Contractor's sole responsibility to file a Notice of Intent and procure coverage under the Permit for all construction activity which results in the disturbance of more than one acre of total land area or which is part of a larger common area of development or sale. Prior to initiating work, Contractor shall be solely responsible for preparing and implementing a Storm Water Pollution Prevention Plan (SWPPP) as required by the Permit. Contractor shall be responsible for procuring, implementing and complying with the provisions of the Permit and the SWPPP, including the standard provisions, and monitoring and reporting requirements as required by the Permit. The Permit requires the SWPPP to be a "living document" that changes as necessary to meet the conditions and requirements of the job site as it progresses through difference phases of construction and is subject to different weather conditions. It shall be Contractor's sole responsibility to update the SWPPP as necessary to address conditions at the project site.

3.8.1.3 Other Water Quality Rules Regulations and Policies. Contractor shall comply with the lawful requirements of any applicable municipality, drainage City,

or local agency regarding discharges of storm water to separate storm drain systems or other watercourses under their jurisdiction, including applicable requirements in municipal storm water management programs.

3.8.1.4 Cost of Compliance. Storm, surface, nuisance, or other waters may be encountered at various times during construction of The Work. Therefore, the Contractor, by submitting a Bid, hereby acknowledges that it has investigated the risk arising from such waters, has prepared its Bid accordingly, and assumes any and all risks and liabilities arising therefrom.

3.8.1.5 Liability for Non-Compliance. Failure to comply with the Permit is a violation of federal and state law. Pursuant to the indemnification provisions of this Contract, Contractor hereby agrees to defend, indemnify and hold harmless the City and its officials, officers, employees, volunteers and agents for any alleged violations. In addition, City may seek damages from Contractor for any delay in completing the Work in accordance with the Contract, if such delay is caused by or related to Contractor's failure to comply with the Permit.

3.8.1.6 Reservation of Right to Defend. City reserves the right to defend any enforcement action brought against the City for Contractor's failure to comply with the Permit or any other relevant water quality law, regulation, or policy. Pursuant to the indemnification provisions of this Contract, Contractor hereby agrees to be bound by, and to reimburse the City for the costs (including the City's attorney's fees) associated with, any settlement reached between the City and the relevant enforcement entity.

3.8.1.7 Training. In addition to the standard of performance requirements set forth in paragraph 3.4, Contractor warrants that all employees and subcontractors shall have sufficient skill and experience to perform the Work assigned to them without impacting water quality in violation of the laws, regulations and policies described in paragraph 3.8.1. Contractor further warrants that it, its employees and subcontractors will receive adequate training, as determined by City, regarding the requirements of the laws, regulations and policies described in paragraph 3.8.1 as they may relate to the Work provided under this Agreement. Upon request, City will provide the Contractor with a list of training programs that meet the requirements of this paragraph.

3.8.2 Safety. Contractor shall execute and maintain its work so as to avoid injury or damage to any person or property. Contractor shall comply with the requirements of the specifications relating to safety measures applicable in particular operations or kinds of work. In carrying out its Work, Contractor shall at all times be in compliance with all applicable local, state and federal laws, rules and regulations, and shall exercise all necessary precautions for the safety of employees appropriate to the nature of the Work and the conditions under which the Work is to be performed. Safety precautions as applicable shall include, but shall not be limited to, adequate life protection and lifesaving equipment; adequate illumination for underground and night operations; instructions in accident prevention for all employees, such as machinery guards, safe walkways, scaffolds, ladders, bridges, gang planks, confined space procedures, trenching and shoring, fall protection and other safety devices, equipment and wearing apparel as are necessary or lawfully required to prevent accidents or injuries; and adequate facilities for the proper inspection and maintenance of all safety measures. Furthermore, Contractor shall prominently display the names and telephone numbers of at least two medical doctors practicing in the vicinity of the Project, as well as the telephone number of the local ambulance service, adjacent to all telephones at the Project site.

3.8.3 Laws and Regulations. Contractor shall keep itself fully informed of and in compliance with all local, state and federal laws, rules and regulations in any manner affecting the performance of the Contract or the Work, including all Cal/OSHA requirements, and shall give all notices required by law. Contractor shall be liable for all violations of such laws and regulations in connection with Work. If Contractor observes that the drawings or specifications are at variance with any law, rule or regulation, it shall promptly notify the City in writing. Any necessary changes shall be made by written change order. If Contractor performs any work knowing it to be contrary to such laws, rules and regulations and without giving written notice to the City, Contractor shall be solely responsible for all costs arising therefrom. City is a public entity of the State of California subject to certain provisions of the Health & Safety Code, Government Code, Public Contract Code, and Labor Code of the State. It is stipulated and agreed that all provisions of the law applicable to the public contracts of a municipality are a part of this Contract to the same extent as though set forth herein and will be complied with. Contractor shall defend, indemnify and hold City, its officials, officers, employees and agents free and harmless, pursuant to the indemnification provisions of this Contract, from any claim or liability arising out of any failure or alleged failure to comply with such laws, rules or regulations.

3.8.4 Permits and Licenses. Contractor shall be responsible for securing City permits and licenses necessary to perform the Work described herein, including, but not limited to, any required business license. While Contractor will not be charged a fee for any City permits, Contractor shall pay the City's business license fee, if any. Any ineligible contractor or subcontractor pursuant to Labor Code Sections 1777.1 and 1777.7 may not perform work on this Project.

3.8.5 Trenching Work. If the Total Contract Price exceeds $25,000 and if the Work governed by this Contract entails excavation of any trench or trenches five (5) feet or more in depth, Contractor shall comply with all applicable provisions of the California Labor Code, including Section 6705. To this end, Contractor shall submit for City's review and approval a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the shoring system standards, the plan shall be prepared by a registered civil or structural engineer.

3.8.6 Hazardous Materials and Differing Conditions. As required by California Public Contract Code Section 7104, if this Contract involves digging trenches or other excavations that extend deeper than four (4) feet below the surface, Contractor shall promptly, and prior to disturbance of any conditions, notify City of: (1) any material discovered in excavation that Contractor believes to be a hazardous waste that is required to be removed to a Class I, Class II or Class III disposal site; (2) subsurface or latent physical conditions at the site differing from those indicated by City; and (3) unknown physical conditions of an unusual nature at the site, significantly different from those ordinarily encountered in such contract work. Upon notification, City shall promptly investigate the conditions to determine whether a change order is appropriate. In the event of a dispute, Contractor shall not be excused from any scheduled completion date and shall proceed with all Work to be performed under the Contract, but shall retain all rights provided by the Contract or by law for making protests and resolving the dispute.

3.8.7 Underground Utility Facilities. To the extent required by Section 4215 of the California Government Code, City shall compensate Contractor for the costs of: (1) locating and repairing damage to underground utility facilities not caused by the failure of Contractor to exercise reasonable care; (2) removing or relocating underground utility facilities not indicated in the construction drawings; and (3) equipment necessarily idled during such work. Contractor shall not

be assessed liquidated damages for delay caused by failure of City to provide for removal or relocation of such utility facilities.

3.8.8 Air Quality. Contractor must fully comply with all applicable laws, rules and regulations in furnishing or using equipment and/or providing services, including, but not limited to, emissions limits and permitting requirements imposed by the California Air Resources Board (CARB). Although CARB limits and requirements are more broad, Contractor shall specifically be aware of their application to "portable equipment", which definition is considered by CARB to include any item of equipment with a fuel-powered engine. Contractor shall indemnify City against any fines or penalties imposed by CARB, or any other governmental or regulatory agency for violations of applicable laws, rules and/or regulations by Contractor, its subcontractors, or others for whom Contractor is responsible under its indemnity obligations provided for in this Agreement.

3.8.9 State Recycling Mandates. Contractor shall comply with State Recycling Mandates. Any recyclable materials/debris collected by the contractor that can be feasibly diverted via reuse or recycling must be hauled by the appropriate handler for reuse or recycling.

3.9 Completion of Work. When Contractor determines that it has completed the Work required herein, Contractor shall so notify City in writing and shall furnish all labor and material releases required by this Contract. City shall thereupon inspect the Work. If the Work is not acceptable to the City, the City shall indicate to Contractor in writing the specific portions or items of Work which are unsatisfactory or incomplete. Once Contractor determines that it has completed the incomplete or unsatisfactory Work, Contractor may request a reinspection by the City. Once the Work is acceptable to City, City shall pay to Contractor the Total Contract Price remaining to be paid, less any amount which City may be authorized or directed by law to retain. Payment of retention proceeds due to Contractor shall be made in accordance with Section 7107 of the California Public Contract Code.

3.10 Claims; Government Code Claim Compliance.

3.10.1 Intent. Effective January 1, 1991, Section 20104 et seq., of the California Public Contract Code prescribes a process utilizing informal conferences, non-binding judicial supervised mediation, and judicial arbitration to resolve disputes on construction claims of $375,000 or less. Effective January 1, 2017, Section 9204 of the Public Contract Code prescribes a process for negotiation and mediation to resolve disputes on construction claims. The intent of this Section is to implement Sections 20104 et seq. and Section 9204 of the California Public Contract Code. This Section shall be construed to be consistent with said statutes.

3.10.2 Claims. For purposes of this Section, “Claim” means a separate demand by the Contractor, after a change order duly requested in accordance with the terms of this Contract has been denied by the City, for (A) a time extension, (B) payment of money or damages arising from Work done by or on behalf of the Contractor pursuant to the Contract, or (C) an amount the payment of which is disputed by the City. Claims governed by this Section may not be filed unless and until the Contractor completes all procedures for giving notice of delay or change and for the requesting of a time extension or change order, including but not necessarily limited to the change order procedures contained herein, and Contractor’s request for a change has been denied in whole or in part. Claims governed by this Section must be filed no later than fourteen (14) days after a request for change has been denied in whole or in part or after any other event giving rise to the Claim. The Claim shall be submitted in writing to the City and shall include on its first page the following in 16 point capital font: “THIS IS A CLAIM.” Furthermore, the claim shall include the documents necessary to substantiate the claim. Nothing in this Section is intended to extend the

time limit or supersede notice requirements otherwise provided by contract for the filing of claims, including all requirements pertaining to compensation or payment for extra Work, disputed Work, and/or changed conditions. Failure to follow such contractual requirements shall bar any claims or subsequent lawsuits for compensation or payment thereon.

3.10.3 Supporting Documentation. The Contractor shall submit all claims in the following format:

3.10.3.1 Summary of claim merit and price, reference Contract Document provisions pursuant to which the claim is made

3.10.3.2 List of documents relating to claim:

(A) Specifications

(B) Drawings

(C) Clarifications (Requests for Information)

(D) Schedules

(E) Other

3.10.3.3 Chronology of events and correspondence

3.10.3.4 Analysis of claim merit

3.10.3.5 Analysis of claim cost

3.10.3.6 Time impact analysis in CPM format

3.10.3.7 If Contractor's claim is based in whole or in part on an allegation of errors or omissions in the Drawings or Specifications for the Project, Contractor shall provide a summary of the percentage of the claim subject to design errors or omissions and shall obtain a certificate of merit in support of the claim of design errors and omissions.

3.10.3.8 Cover letter and certification of validity of the claim, including any claims from subcontractors of any tier, in accordance with Government Code section 12650 *et seq*.

3.10.4 City's Response. Upon receipt of a claim pursuant to this Section, City shall conduct a reasonable review of the claim and, within a period not to exceed 45 days, shall provide the Contractor a written statement identifying what portion of the claim is disputed and what portion is undisputed. Any payment due on an undisputed portion of the claim will be processed and made within 60 days after the public entity issues its written statement.

3.10.4.1 If City needs approval from its governing body to provide the Contractor a written statement identifying the disputed portion and the undisputed portion of the claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of a claim sent by registered mail or certified mail, return receipt requested, City shall have up to three days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension, expires to provide the Contractor a written statement identifying the disputed portion and the undisputed portion.

3.10.4.2 Within 30 days of receipt of a claim, City may request in writing additional documentation supporting the claim or relating to defenses or claims City may have against the Contractor. If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of City and the Contractor.

3.10.4.3 City's written response to the claim, as further documented, shall be submitted to the Contractor within 30 days (if the claim is less than $50,000, within 15 days) after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor in producing the additional information or requested documentation, whichever is greater.

3.10.5 Meet and Confer. If the Contractor disputes City's written response, or City fails to respond within the time prescribed, the Contractor may so notify City, in writing, either within 15 days of receipt of City's response or within 15 days of City's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand, City shall schedule a meet and confer conference within 30 days for settlement of the dispute.

3.10.6 Mediation. Within 10 business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, City shall provide the Contractor a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after City issues its written statement. Any disputed portion of the claim, as identified by the Contractor in writing, shall be submitted to nonbinding mediation, with City and the Contractor sharing the associated costs equally. City and Contractor shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing, unless the parties agree to select a mediator at a later time.

3.10.6.1 If the Parties cannot agree upon a mediator, each Party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each Party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator.

3.10.6.2 For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the Parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

3.10.6.3 Unless otherwise agreed to by City and the Contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Section 20104.4 to mediate after litigation has been commenced.

3.10.6.4 The mediation shall be held no earlier than the date the Contractor completes the Work or the date that the Contractor last performs Work, whichever is earlier. All unresolved claims shall be considered jointly in a single mediation, unless a new unrelated claim arises after mediation is completed.

3.10.7 Procedures After Mediation. If following the mediation, the claim or any portion remains in dispute, the Contractor must file a claim pursuant to Chapter 1 (commencing with

Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the Contractor submits his or her written claim pursuant to subdivision (a) until the time the claim is denied, including any period of time utilized by the meet and confer conference or mediation.

3.10.8 Civil Actions. The following procedures are established for all civil actions filed to resolve claims subject to this Section:

3.10.8.1 Within 60 days, but no earlier than 30 days, following the filing or responsive pleadings, the court shall submit the matter to non-binding mediation unless waived by mutual stipulation of both parties or unless mediation was held prior to commencement of the action in accordance with Public Contract Code section 9204 and the terms of these procedures.. The mediation process shall provide for the selection within 15 days by both parties of a disinterested third person as mediator, shall be commenced within 30 days of the submittal, and shall be concluded within 15 days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court.

3.10.8.2 If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1114.11 of that code. The Civil Discovery Act of 1986 (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of Part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

3.10.8.3 In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, (A) arbitrators shall, when possible, be experienced in construction law, and (B) any party appealing an arbitration award who does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, also pay the attorney's fees on appeal of the other party.

3.10.9 Government Code Claims. In addition to any and all contract requirements pertaining to notices of and requests for compensation or payment for extra work, disputed work, claims and/or changed conditions, Contractor must comply with the claim procedures set forth in Government Code sections 900 et seq. prior to filing any lawsuit against the City. Such Government Code claims and any subsequent lawsuit based upon the Government Code claims shall be limited to those matters that remain unresolved after all procedures pertaining to extra work, disputed work, claims, and/or changed conditions have been followed by Contractor. If no such Government Code claim is submitted, or if any prerequisite contractual requirements are not otherwise satisfied as specified herein, Contractor shall be barred from bringing and maintaining a valid lawsuit against the City. A Government Code claim must be filed no earlier than the date the work is completed or the date the Contractor last performs work on the Project, whichever occurs first. A Government Code claim shall be inclusive of all unresolved claims unless a new unrelated claim arises after the Government Code claim is submitted.

3.10.10 Non-Waiver. City's failure to respond to a claim from the Contractor within the time periods described in this Section or to otherwise meet the time requirements of this Section shall result in the claim being deemed rejected in its entirety. City's failure to respond shall not waive City's rights to any subsequent procedures for the resolution of disputed claims.

3.11 Loss and Damage. Except as may otherwise be limited by law, Contractor shall be responsible for all loss and damage which may arise out of the nature of the Work agreed to herein, or from the action of the elements, or from any unforeseen difficulties which may arise or be encountered in the prosecution of the Work until the same is fully completed and accepted by City.

3.12 Indemnification.

3.12.1 Scope of Indemnity**.** To the fullest extent permitted by law, Contractor shall defend, indemnify and hold the City, its officials, employees, agents and authorized volunteers free and harmless from any and all claims, demands, causes of action, suits, actions, proceedings, costs, expenses, liability, judgments, awards, decrees, settlements, loss, damage or injury of any kind, in law or equity, to property or persons, including wrongful death, (collectively, "Claims") in any manner arising out of, pertaining to, or incident to any alleged acts, errors or omissions, or willful misconduct of Contractor, its officials, officers, employees, subcontractors, consultants or agents in connection with the performance of the Contractor's services, the Project or this Agreement, including without limitation the payment of all consequential damages, expert witness fees and attorneys' fees and other related costs and expenses. Notwithstanding the foregoing, to the extent required by Civil Code section 2782, Contractor's indemnity obligation shall not apply to liability for damages for death or bodily injury to persons, injury to property, or any other loss, damage or expense arising from the sole or active negligence or willful misconduct of the City or the City's agents, servants, or independent contractors who are directly responsible to the City, or for defects in design furnished by those persons.

3.12.2 Additional Indemnity Obligations**.** Contractor shall defend, with counsel of City's choosing and at Contractor's own cost, expense and risk, any and all Claims covered by this section that may be brought or instituted against City or its officials, employees, agents and authorized volunteers. In addition, Contractor shall pay and satisfy any judgment, award or decree that may be rendered against City or its officials, employees, agents and authorized volunteers as part of any such claim, suit, action or other proceeding. Contractor shall also reimburse City for the cost of any settlement paid by City or its officials, employees, agents and authorized volunteers as part of any such claim, suit, action or other proceeding. Such reimbursement shall include payment for City's attorney's fees and costs, including expert witness fees. Contractor shall reimburse City and its officials, employees, agents and authorized volunteers, for any and all legal expenses and costs incurred by each of them in connection therewith or in enforcing the indemnity herein provided. Contractor's obligation to indemnify shall not be restricted to insurance proceeds, if any, received by the City, its officials, employees, agents and authorized volunteers.

3.13 Insurance.

3.13.1 Time for Compliance. Contractor shall not commence Work under this Contract until it has provided evidence satisfactory to the City that it has secured all insurance required under this section. In addition, Contractor shall not allow any subcontractor to commence work on any subcontract until it has provided evidence satisfactory to the City that the subcontractor has secured all insurance required under this section. Failure to provide and maintain all required insurance shall be grounds for the City to terminate this Contract for cause.

3.13.2 Minimum Requirements. Contractor shall, at its expense, procure and maintain for the duration of the Contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the Work hereunder by Contractor, its agents, representatives, employees or subcontractors. Contractor

shall also require all of its subcontractors to procure and maintain the same insurance for the duration of the Contract. Such insurance shall meet at least the following minimum levels of coverage:

3.13.2.1 Minimum Scope of Insurance. Coverage shall be at least as broad as the latest version of the following: (1) *General Liability:* Insurance Services Office Commercial General Liability coverage (occurrence form CG 00 01) OR Insurance Services Office Owners and Contractors Protective Liability Coverage Form (CG 00 09 11 88) (coverage for operations of designated contractor); (2) *Automobile Liability:* Insurance Services Office Business Auto Coverage form number CA 00 01, code 1 (any auto); and (3) *Workers' Compensation and Employer's Liability:* Workers' Compensation insurance as required by the State of California and Employer's Liability Insurance. Policies shall not contain exclusions contrary to this Contract.

3.13.2.2 Minimum Limits of Insurance. Contractor shall maintain limits no less than: (1) *General Liability:* $5,000,000 per occurrence and $5,000,000 aggregate for bodily injury, personal injury and property damage; (2) *Automobile Liability:* $5,000,000 per accident for bodily injury and property damage; and (3) *Workers' Compensation and Employer's Liability:* Workers' compensation limits as required by the Labor Code of the State of California. Employer's Liability limits of $1,000,000 each accident, policy limit bodily injury or disease, and each employee bodily injury or disease. Defense costs shall be available in addition to the limits. Notwithstanding the minimum limits specified herein, any available coverage shall be provided to the parties required to be named as additional insureds pursuant to this Contract.

3.13.3 Insurance Endorsements. The insurance policies shall contain the following provisions, or Contractor shall provide endorsements (amendments) on forms supplied or approved by the City to add the following provisions to the insurance policies:

3.13.3.1 General Liability. (1) Such policy shall give the City, its officials, employees, agents and authorized volunteers additional insured status using ISO endorsements CG20 10 10 01 plus CG20 37 10 01, or endorsements providing the exact same coverage, with respect to the Work or operations performed by or on behalf of Contractor, including materials, parts or equipment furnished in connection with such work; (2) all policies shall waive or shall permit Contractor to waive all rights of subrogation which may be obtained by the Contractor or any insurer by virtue of payment of any loss or any coverage provided to any person named as an additional insured pursuant to this Contract, and Contractor agrees to waive all such rights of subrogation; and (3) the insurance coverage shall be primary insurance as respects the City, its officials, employees, agents and authorized volunteers, or if excess, shall stand in an unbroken chain of coverage excess of Contractor's scheduled underlying coverage. Any insurance or self-insurance maintained by the City, its officials, employees, agents and authorized volunteers shall be excess of Contractor's insurance and shall not be called upon to contribute with it.

3.13.3.2 Automobile Liability. (1) Such policy shall give the City, its officials, employees, agents and authorized volunteers additional insured status with respect to the ownership, operation, maintenance, use, loading or unloading of any auto owned, leased, hired or borrowed by Contractor or for which Contractor is responsible; (2) all policies shall waive or shall permit Contractor to waive all rights of subrogation which may be obtained by the Contractor or any insurer by virtue of payment of any loss or any coverage provided to any person named as an additional insured pursuant to this Contract, and Contractor agrees to waive all such rights of subrogation; and (3) the insurance coverage shall be primary insurance as respects the City, its officials, employees, agents and authorized volunteers, or if excess, shall stand in an unbroken chain of coverage excess of Contractor's scheduled underlying coverage. Any insurance or self-

insurance maintained by the City, its officials, employees, agents and authorized volunteers shall be excess of Contractor's insurance and shall not be called upon to contribute with it in any way.

3.13.3.3 Workers' Compensation and Employer's Liability Coverage. The insurer shall agree to waive all rights of subrogation against the City, its officials, employees, agents and authorized volunteers for losses paid under the terms of the insurance policy which arise from work performed by Contractor.

3.13.3.4 All Coverages. Each insurance policy required by this Contract shall be endorsed to state that: (1) coverage shall not be suspended, voided, reduced or canceled except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the City; and (2) any failure to comply with reporting or other provisions of the policies, including breaches of warranties, shall not affect coverage provided to the City, its officials, employees, agents and authorized volunteers.

3.13.4 Separation of Insureds; No Special Limitations. All insurance required by this Section shall contain standard separation of insureds provisions. In addition, such insurance shall not contain any special limitations on the scope of protection afforded to the City, its officials, employees, agents and authorized volunteers.

3.13.5 Deductibles and Self-Insurance Retentions. Any deductibles or self-insured retentions must be declared to and approved by the City. Contractor shall guarantee that, at the option of the City, either: (1) the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the City, its officials, employees, agents and authorized volunteers; or (2) the Contractor shall procure a bond or other financial guarantee acceptable to the City guaranteeing payment of losses and related investigation costs, claims and administrative and defense expenses.

3.13.6 Acceptability of Insurers. Insurance is to be placed with insurers with a current A.M. Best's rating no less than A:VII, licensed to do business in California, and satisfactory to the City. Exception may be made for the State Compensation Insurance Fund when not specifically rated.

3.13.7 Verification of Coverage. Contractor shall furnish City with original certificates of insurance and endorsements effecting coverage required by this Contract on forms satisfactory to the City. The certificates and endorsements for each insurance policy shall be signed by a person authorized by that insurer to bind coverage on its behalf, and shall be on forms supplied or approved by the City. All certificates and endorsements must be received and approved by the City before work commences. The City reserves the right to require complete, certified copies of all required insurance policies, at any time.

3.13.8 Subcontractors. All subcontractors shall meet the requirements of this Section before commencing Work. Contractor shall furnish separate certificates and endorsements for each subcontractor. Subcontractor policies of General Liability insurance shall name the City, its officials, employees, agents and authorized volunteers as additional insureds using form ISO 20 38 04 13 or endorsements providing the exact same coverage. All coverages for subcontractors shall be subject to all of the requirements stated herein except as otherwise agreed to by the City in writing.

3.13.9 Reporting of Claims. Contractor shall report to the City, in addition to Contractor's insurer, any and all insurance claims submitted by Contractor in connection with the Work under this Contract.

3.14 Bond Requirements.

3.14.1 Payment Bond. If required by law or otherwise specifically requested by City in Exhibit "C" attached hereto and incorporated herein by reference, Contractor shall execute and provide to City concurrently with this Contract a Payment Bond in an amount required by the City and in a form provided or approved by the City. If such bond is required, no payment will be made to Contractor until the bond has been received and approved by the City.

3.14.2 Performance Bond. If specifically requested by City in Exhibit "C" attached hereto and incorporated herein by reference, Contractor shall execute and provide to City concurrently with this Contract a Performance Bond in an amount required by the City and in a form provided or approved by the City. If such bond is required, no payment will be made to Contractor until the bond has been received and approved by the City.

3.14.3 Bond Provisions. Should, in City's sole opinion, any bond become insufficient or any surety be found to be unsatisfactory, Contractor shall renew or replace the effected bond within (ten) 10 days of receiving notice from City. In the event the surety or Contractor intends to reduce or cancel any required bond, at least thirty (30) days prior written notice shall be given to the City, and Contractor shall post acceptable replacement bonds at least ten (10) days prior to expiration of the original bonds. No further payments shall be deemed due or will be made under this Contract until any replacement bonds required by this Section are accepted by the City. To the extent, if any, that the Total Contract Price is increased in accordance with the Contract, Contractor shall, upon request of the City, cause the amount of the bond to be increased accordingly and shall promptly deliver satisfactory evidence of such increase to the City. If Contractor fails to furnish any required bond, the City may terminate the Contract for cause.

3.14.4 Surety Qualifications. Only bonds executed by an admitted surety insurer, as defined in California Code of Civil Procedure Section 995.120, shall be accepted. If a California-admitted surety insurer issuing bonds does not meet these requirements, the insurer will be considered qualified if it is in conformance with Section 995.660 of the California Code of Civil Procedure, and proof of such is provided to the City.

3.15 Warranty. Contractor warrants all Work under the Contract (which for purposes of this Section shall be deemed to include unauthorized work which has not been removed and any non-conforming materials incorporated into the Work) to be of good quality and free from any defective or faulty material and workmanship. Contractor agrees that for a period of one year (or the period of time specified elsewhere in the Contract or in any guarantee or warranty provided by any manufacturer or supplier of equipment or materials incorporated into the Work, whichever is later) after the date of final acceptance, Contractor shall within ten (10) days after being notified in writing by the City of any defect in the Work or non-conformance of the Work to the Contract, commence and prosecute with due diligence all Work necessary to fulfill the terms of the warranty at its sole cost and expense. Contractor shall act sooner as requested by the City in response to an emergency. In addition, Contractor shall, at its sole cost and expense, repair and replace any portions of the Work (or work of other contractors) damaged by its defective Work or which becomes damaged in the course of repairing or replacing defective Work. For any Work so corrected, Contractor's obligation hereunder to correct defective Work shall be reinstated for an additional one year period, commencing with the date of acceptance of such corrected Work. Contractor shall

perform such tests as the City may require to verify that any corrective actions, including, without limitation, redesign, repairs, and replacements comply with the requirements of the Contract. All costs associated with such corrective actions and testing, including the removal, replacement, and reinstitution of equipment and materials necessary to gain access, shall be the sole responsibility of Contractor. All warranties and guarantees of subcontractors, suppliers and manufacturers with respect to any portion of the Work, whether express or implied, are deemed to be obtained by Contractor for the benefit of the City, regardless of whether or not such warranties and guarantees have been transferred or assigned to the City by separate agreement and Contractor agrees to enforce such warranties and guarantees, if necessary, on behalf of the City. In the event that Contractor fails to perform its obligations under this Section, or under any other warranty or guaranty under this Contract, to the reasonable satisfaction of the City, the City shall have the right to correct and replace any defective or non-conforming Work and any work damaged by such work or the replacement or correction thereof at Contractor's sole expense. Contractor shall be obligated to fully reimburse the City for any expenses incurred hereunder upon demand.

3.16 Employee/Labor Certifications.

3.16.1 Contractor's Labor Certification. By its signature hereunder, Contractor certifies that he is 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 that Code, and agrees to comply with such provisions before commencing the performance of the Work. A certification form for this purpose, which is attached to this Contract as Exhibit "D" and incorporated herein by reference, shall be executed simultaneously with this Contract.

3.16.2 Equal Opportunity Employment. Contractor represents that it is an equal opportunity employer and that it shall not discriminate against any employee or applicant for employment because of race, religion, color, national origin, ancestry, sex, age or other interests protected by the State or Federal Constitutions. Such non-discrimination shall include, but not be limited to, all activities related to initial employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff or termination.

3.16.3 Verification of Employment Eligibility. By executing this Contract, Contractor verifies that it fully complies with all requirements and restrictions of state and federal law respecting the employment of undocumented aliens, including, but not limited to, the Immigration Reform and Control Act of 1986, as may be amended from time to time, and shall require all subcontractors and sub-subcontractors to comply with the same.

3.17 General Provisions.

3.17.1 City's Representative. The City hereby designates the General Manager, or his or her designee, to act as its representative for the performance of this Contract ("City's Representative"). City's Representative shall have the power to act on behalf of the City for all purposes under this Contract. Contractor shall not accept direction or orders from any person other than the City's Representative or his or her designee.

3.17.2 Contractor's Representative. Before starting the Work, Contractor shall submit in writing the name, qualifications and experience of its proposed representative who shall be subject to the review and approval of the City ("'Contractor's Representative"). Following approval by the City, Contractor's Representative shall have full authority to represent and act on behalf of Contractor for all purposes under this Contract. Contractor's Representative shall

supervise and direct the Work, using his best skill and attention, and shall be responsible for all construction means, methods, techniques, sequences and procedures and for the satisfactory coordination of all portions of the Work under this Contract. Contractor's Representative shall devote full time to the Project and either he or his designee, who shall be acceptable to the City, shall be present at the Work site at all times that any Work is in progress and at any time that any employee or subcontractor of Contractor is present at the Work site. Arrangements for responsible supervision, acceptable to the City, shall be made for emergency Work which may be required. Should Contractor desire to change its Contractor's Representative, Contractor shall provide the information specified above and obtain the City's written approval.

3.17.3 Termination. This Contract may be terminated by City at any time, either with or without cause, by giving Contractor three (3) days advance written notice. In the event of termination by City for any reason other than the fault of Contractor, City shall pay Contractor for all Work performed up to that time as provided herein. In the event of breach of the Contract by Contractor, City may terminate the Contract immediately without notice, may reduce payment to Contractor in the amount necessary to offset City's resulting damages, and may pursue any other available recourse against Contractor. Contractor may not terminate this Contract except for cause. In the event this Contract is terminated in whole or in part as provided, City may procure, upon such terms and in such manner as it may determine appropriate, services similar to those terminated. Further, if this Contract is terminated as provided, City may require Contractor to provide all finished or unfinished documents, data, diagrams, drawings, materials or other matter prepared or built by Contractor in connection with its performance of this Contract.

3.17.4 Contract Interpretation. Should any question arise regarding the meaning or import of any of the provisions of this Contract or written or oral instructions from City, the matter shall be referred to City's Representative, whose decision

3.17.5 Anti-Trust Claims. This provision shall be operative if this Contract is applicable to California Public Contract Code Section 7103.5. In entering into this Contract to supply goods, services or materials, Contractor hereby offers and agrees to assign to the City all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2, commencing with Section 16700, of Part 2 of Division 7 of the Business and Professions Code) arising from purchases of goods, services, or materials pursuant to the Contract. This assignment shall be made and become effective at the time the City tender final payment to Contractor, without further acknowledgment by the Parties.

3.17.6 Notices. All notices hereunder and communications regarding interpretation of the terms of the Contract or changes thereto shall be provided by the mailing thereof by registered or certified mail, return receipt requested, postage prepaid and addressed as follows:

CONTRACTOR:

Stockbridge General Contracting, Inc.
2972 Larkin Ave, Clovis Ca. 93612

Guy Stockbridge, CEO

CITY:

City of Merced
2525 "O" Street
Merced, California 95340
Attn: Daryl Jordan PE
City Engineer

Any notice so given shall be considered received by the other Party three (3) days after deposit in the U.S. Mail as stated above and addressed to the Party at the above address. Actual notice shall be deemed adequate notice on the date actual notice occurred, regardless of the method of service.

3.17.7 Time of Essence. Time is of the essence in the performance of this Contract.

3.17.8 Assignment Forbidden. Contractor shall not, either voluntarily or by action of law, assign or transfer this Contract or any obligation, right, title or interest assumed by Contractor herein without the prior written consent of City. If Contractor attempts an assignment or transfer of this Contract or any obligation, right, title or interest herein, City may, at its option, terminate and revoke the Contract and shall thereupon be relieved from any and all obligations to Contractor or its assignee or transferee.

3.17.9 No Third Party Beneficiaries. There are no intended third party beneficiaries of any right or obligation assumed by the Parties.

3.17.10 Governing Laws; Venue. This Agreement shall be interpreted in accordance with the laws of the State of California. If any action is brought to interpret or enforce any term of this Agreement, the action shall be brought in a state or federal court situated in the County of Merced, State of California.

3.17.11 Counterparts. This Contract may be executed in counterparts, each of which shall constitute an original.

3.17.12 Successors. The Parties do for themselves, their heirs, executors, administrators, successors, and assigns agree to the full performance of all of the provisions contained in this Contract.

3.17.13 [Reserved]

3.17.14 Solicitation. Contractor maintains and warrants that it has not employed nor retained any company or person, other than a bona fide employee working solely for Contractor, to solicit or secure this Contract. Further, Contractor warrants that it has not paid nor has it agreed to pay any company or person, other than a bona fide employee working solely for Contractor, any fee, commission, percentage, brokerage fee, gift or other consideration contingent upon or resulting from the award or making of this Contract. For breach or violation of this warranty, City shall have the right to terminate this Contract without liability.

3.17.15 Conflict of Interest. Contractor maintains and warrants that it has not employed nor retained any company or person, other than a bona fide employee working solely for Contractor, to solicit or secure this Agreement. Further, Contractor warrants that it has not paid nor has it agreed to pay any company or person, other than a bona fide employee working

solely for Contractor, any fee, commission, percentage, brokerage fee, gift or other consideration contingent upon or resulting from the award or making of this Agreement. For breach or violation of this warranty, City shall have the right to rescind this Agreement without liability. For the term of this Contract, no official, officer or employee of City, during the term of his or her service with City, shall have any direct interest in this Contract, or obtain any present or anticipated material benefit arising therefrom. In addition, Contractor agrees to file, or to cause its employees or subcontractors to file, a Statement of Economic Interest with the City's Filing Officer as required under state law in the performance of the Work.

3.17.16 Certification of License.

3.17.16.1 Contractor certifies that as of the date of execution of this Contract, Contractor has a current contractor's license of the classification indicated below under Contractor's signature.

3.17.16.2 Contractors are required by law to be licensed and regulated by the Contractors' State License Board which has jurisdiction to investigate complaints against contractors if a complaint regarding a patent act or omission is filed within four (4) years of the date of the alleged violation. A complaint regarding a latent act or omission pertaining to structural defects must be filed within ten (10) years of the date of the alleged violation. Any questions concerning a contractor may be referred to the Registrar, Contractors' State License Board, P.O. Box 26000, Sacramento, California 95826.

3.17.17 Authority to Enter Contract. Each Party warrants that the individuals who have signed this Contract have the legal power, right and authority to make this Contract and bind each respective Party.

3.17.18 Entire Contract; Modification. This Contract contains the entire agreement of the Parties with respect to the subject matter hereof, and supersedes all prior negotiations, understandings or agreements. This Contract may only be modified by a writing signed by both Parties.

3.17.19 Non-Waiver. None of the provisions of this Agreement shall be considered waived by either party, unless such waiver is specifically specified in writing.

3.17.20 City's Right to Employ Other Contractors. City reserves right to employ other contractors in connection with this Project or other projects.

[SIGNATURES ON NEXT PAGE]

SIGNATURE PAGE FOR CONSTRUCTION CONTRACT BETWEEN THE CITY OF MERCED AND STOCKBRIDGE GENERAL CONTRACTING, INC.

IN WITNESS WHEREOF, the Parties have entered into this Agreement as of the _____ day of _____, 2026.

CITY OF MERCED

By: _____
D. Scott McBride
City Manager

ATTEST:

By: _____
Deputy City Clerk

(SEAL)

STOCKBRIDGE GENERAL CONTRACTING, INC.

By: Kristopher Sarnowsky

Printed Name: Kristopher Sarnowsky

Title: Authorized Signer

Address: 2972 Larkin Ave
Clovis, Ca 93612

Phone: 559-292-7760

Fax: 559-476-1780

Email: kriss@eliteteamoffices.com

Taxpayer ID No.: 45-3138551

ACCOUNT DATA:

Project No.: CP240049

Vendor No.: _____

Project Account Number(s) / Amount:

By: _____
Finance Officer Verification

APPROVED AS TO FORM:

By: _____
City Attorney

EXHIBIT “A” - SERVICES / SCHEDULE

The work to be performed includes, but is not limited to, earth work, installing concrete pathways, installing pour-in-place rubber surfacing, installing engineered wood fiber, irrigation, underground utilities, and installing prepurchase playground equipment

Such other items or details, not mentioned above, that are required by the Drawings and Technical Specifications Plans, City of Merced Standard Specifications and Typical Details, and the Special Conditions shall be performed, placed, constructed, or installed.

The project is located in the north part of Merced and situated at the northwest corner of Cardella Road and Freemark Avenue. Bids are required for the entire work described herein.

The work shall be Completed within **65 working days** of Notice to Proceed.

	CITY OF MERCED PROJECT NO. CP240049 - GENERAL VANG PAO PARK				
NO.	ITEM	UNIT OF MEASURE	ESTIMATED QUANTITY	UNIT PRICE	ITEM TOTAL
1	Permits, Bonds, License & Insurance	LS	1	$ 50,800.00	$ 50,800.00
2	Public Convenience and Safety	LS	1	$ 1,000.00	$ 1,000.00
3	Water Pollution Control	LS	1	$ 18,500.00	$ 18,500.00
4	Earthwork/grading	LS	1	$ 43,400.00	$ 43,400.00
5	Surveying Services	LS	1	$ 10,600.00	$ 10,600.00
6	Demolition Per Plan	LS	1	$ 11,200.00	$ 11,200.00
7	Gravel Parking	SF	11,800	$ 1.40	$ 16,520.00
8	Concrete ADA Parking, Stripping and Signage, and Trunc	LS	1	$ 18,600.00	$ 18,600.00
9	Concrete - Standard Grey	SF	7,200	$ 20.00	$ 144,000.00
10	Concrete Thickened Edge	LF	200	$ 20.00	$ 4,000.00
11	Concrete ADA Ramp at Play Area	EA	1	$ 3,900.00	$ 3,900.00
12	Decomposed Granite	SF	2,100	$ 4.00	$ 8,400.00
13	Steel Edging	LF	160	$ 7.50	$ 1,200.00
14	Landscape Tie Timbers	EA	8	$ 375.00	$ 3,000.00
15	Concrete Seeatwall	LF	30	$ 570.00	$ 17,100.00
16	Boulder - 12'" - 18"	EA	19	$ 165.00	$ 3,135.00
17	Boulder - 24"	EA	30	$ 260.00	$ 7,800.00
18	Boulder - 36"	EA	36	$ 430.00	$ 15,480.00
19	Embedded Log	EA	17	$ 1,000.00	$ 17,000.00
20	Drinking Fountain	EA	1	$ 9,700.00	$ 9,700.00
21	Pour-In-Place Rubber Surfacing	SF	4,780	$ 34.00	$ 162,520.00
22	Eningeered Wood Fiber Fall Material	CY	170	$ 70.00	$ 11,900.00
23	General Vang Pao Memorial Plaza	LS	1	$ 45,800.00	$ 45,800.00
24	Steel Monument Sign - General Vang Pao	EA	1	$ 40,000.00	$ 40,000.00
25	Steel Monument Sign - Aletha June	EA	1	$ 12,700.00	$ 12,700.00
26	First 5 California Sign	EA	1	$ 1,500.00	$ 1,500.00
27	Bark Mulch	CY	125	$ 90.00	$ 11,250.00
28	Trees	EA	41	$ 460.00	$ 18,860.00
29	Shrubs	EA	301	$ 28.00	$ 8,428.00
30	Hydroseed	SF	20,696	$ 0.25	$ 5,174.00
31	Landscape Soil Amendment	LS	1	$ 24,000.00	$ 24,000.00
32	Landscape Irrigation	LS	1	$ 76,000.00	$ 76,000.00

33	Portable Utility Water System	LS	1	$ 9,600.00	$ 9,600.00
34	Sanitary Sewer Utility System	LS	1	$ 4,700.00	$ 4,700.00
35	Storm Drain System	LS	1	$ 21,800.00	$ 21,800.00
36	Electrial Sleeve For Future	LF	100	$ 6.00	$ 600.00
37	Embankment Slide - Install Only	EA	1	$ 4,600.00	$ 4,600.00
38	ADA Twirl a Whirl - Install Only	EA	1	$ 9,000.00	$ 9,000.00
39	Two Bay Swing Set - Install Only	EA	1	$ 13,400.00	$ 13,400.00
40	Large Play Structure - Install Only	EA	1	$ 30,340.00	$ 30,340.00
41	Ramesses Net Climber - Install Only	EA	1	$ 12,800.00	$ 12,800.00
42	Conrete Ping Pong Table - Install Only	EA	1	$ 660.00	$ 660.00
43	Contrabass Chimes - Install Only	EA	1	$ 2,500.00	$ 2,500.00
44	Square Steel Picnic Table - Install Only	EA	6	$ 320.00	$ 1,920.00
45	Trash Receptacles - Install Only	EA	3	$ 110.00	$ 330.00
46	Climbing Logs - Install Only	EA	6	$ 750.00	$ 4,500.00
47	Calypso Drum	EA	1	$ 4,100.00	$ 4,100.00
48	Solar Overhead Lights	EA	5	$ 8,200.00	$ 41,000.00
49	Wavy Railing	ES	2	$ 830.00	$ 1,660.00
				Total	**$ 986,977.00**

LANDSCAPE PLANS FOR THE CONSTRUCTION OF:

CP240049

GENERAL VANG PAO MEMORIAL PARK

4300 FREEMARK AVE
MERCED, CA 95348

PREPARED FOR:

City of Merced
California

CITY OF MERCED
678 WEST 18TH STREET
MERCED, CA 95340
WWW.CITYOFMERCED.GOV/

CP240049

PREPARED BY:

MDG MELTONDESIGNGROUP

MELTON DESIGN GROUP

NORTHERN CALIFORNIA
820 BROADWAY ST.
CHICO, CA 95928
(530) 899-1616

CENTRAL CALIFORNIA
850 PUENTE DR.
SANTA BARBARA, CA 93110
(805) 456-4679

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BEDROCK ENGINEERING
10878 HIGHWAY 41
MADERA, CA 93636
(559) 645-4849

GENERAL CONSTRUCTION NOTE:

CONSTRUCTION UNDER THIS CONTRACT SHALL COMPLY WITH THE LATEST CALIFORNIA BUILDING CODE (CBC), CALIFORNIA FIRE CODE (CFC) CALIFORNIA MECHANICAL CODE (CMC), CALIFORNIA PLUMBING CODE (CPC), CALIFORNIA ELECTRICAL CODE (CEC), AND THE 2022 CALIFORNIA ENERGY STANDARDS AS AMENDED BY THE STATE OF CALIFORNIA AND THE LOCAL JURISDICTION.

PREPARED BY OR UNDER THE SUPERVISION OF:

DATE 03/11/2026

GREG MELTON
RLA No. 4217

ACCEPTED BY:

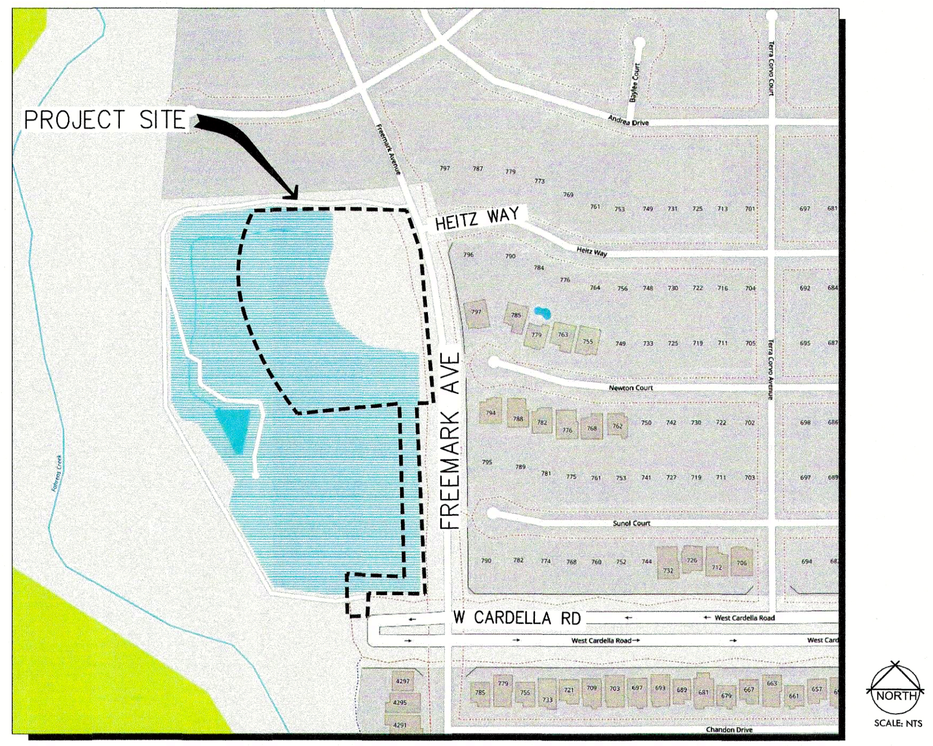
DATE 3/13/26

DARYL JORDAN, PE
CITY ENGINEER

KEY MAP OF PROJECT COUNTY



KEY MAP OF PROJECT SITE



INDEX OF SHEETS

SHEET	TITLE
L0.0	TITLE SHEET
L0.1	PROJECT CHECKLIST
L1.0	EROSION CONTROL PLAN
L1.1	EXISTING CONDITIONS AND DEMOLITION PLAN
C-1	TITLE SHEET
C-2	DEMO PLAN/TOPO SURVEY - SOUTH
C-3	DEMO PLAN/TOPO SURVEY - NORTH
C-4	DEMO PLAN/TOPO SURVEY - WEST
C-5	GRADING PLAN
C-6	SEWER AND WATER PLAN
C-7	CIVIL DETAILS
L2.0	CONSTRUCTION PLAN - OVERALL
L2.0A	CONSTRUCTION PLAN - AREA A
L2.0B	CONSTRUCTION PLAN - AREA B
L2.0B ALT	CONSTRUCTION PLAN - AREA B (ALTERNATE)
L2.1	CONSTRUCTION PLAN - ENLARGEMENTS
L2.2	CONSTRUCTION PLAN - ENLARGEMENTS
L2.3	CONSTRUCTION DETAILS
L2.4	CONSTRUCTION DETAILS
L2.5	CONSTRUCTION DETAILS
L2.6	CONSTRUCTION DETAILS
L2.7	CONSTRUCTION DETAILS
L2.8	CONSTRUCTION DETAILS
L3.0	PLANTING PLAN
L3.1	PLANTING DETAILS
L4.0	IRRIGATION PLAN
L4.1	IRRIGATION DETAILS
L4.2	IRRIGATION DETAILS
L4.3	IRRIGATION CALCULATIONS
E5.0	ELECTRICAL PLAN
E5.1	ELECTRICAL DETAILS

DEFERRED ART:

- PEBBLE HARP - MUSIC ELEMENT DESIGN
- FIRST FIVE SIGNAGE - BUTTERFLY SIGN DESIGN
- GENERAL VANG PAO MEMORIAL STEEL ART PANEL DESIGN
- MONUMENT SIGN ART DESIGNS

NOTE: FINAL ART FOR THE ITEMS LISTED ABOVE ARE TO BE PROVIDED BY THE LANDSCAPE ARCHITECT AFTER THE BID IS AWARDED

DEFERRED FOOTINGS:

- RAMESSES ROPE CLIMBER FOOTING
- SWING SET FOOTING
- HMONG CUSTOM PLAYGROUND STRUCTURE FOOTING

NOTE: SEE DETAILS FOR STRUCTURE TYPICAL FOOTINGS FOR BID PURPOSES ONLY. FOOTING DESIGNS TO BE PROVIDED BY LANDSCAPE ARCHITECT

VENDOR CONTACTS:

- BEDROCK ENGINEERING - STAKING
  DAVE HARTLEY:
  dave@bedrockeng.com
  (559) 645 4849 x(302)
  (559) 645 4869

- PARK PLANET - PLAY STRUCTURE, SHADE STRUCTURE, FLEXGROUND POUR-IN-PLACE AND SITE FURNISHINGS
  KASANNA COULTER:
  Kasanna@parkplanet.com
  559-341-5768

- FONROCHE - LIGHTING
  JACOB FOX :
  Jacob.fox@fonroche.us
  (208)985-6782
  (339)225-4530 EXT:218

- THORCOSTEEL - STEEL CUT-OUTS, STEEL SEATING AND MONUMENT SIGN
  TALON FINDLEY:
  Thorcosteel@outlook.com
  916-663-1887

- OLD LAKE MILL - PLAYGROUND LOGS, LOGS, CUSTOM WOOD TABLES AND BENCH
  GEORGE PENA:
  oldlakemill@gmail.com
  (209) 631-3040

MDG MELTONDESIGNGROUP

820 BROADWAY ST.
CHICO, CA 95928
(530) 899-1616
meltondg.com

LICENSE

REGISTERED LANDSCAPE ARCHITECT
GREG MELTON #4217
EXP. 11-26
STATE OF CALIFORNIA

CONSULTANT

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

TITLE SHEET

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
4.		
5.		
6.		
7.		
8.		

PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

SHEET NUMBER

L0.0

SHEET 01 OF 31

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Page 26 of 12
FILE NAME: G:\MDG\2600-2699\2615 General Vang Pao Park MP and Playground\2615 CAD\Cbx\SHEETS\2615-L0.0-TITLE.dwg
PLOT DATE: February 26, 2026 - 7:17 PM

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (MWELO)
SOILS MANAGEMENT REPORT NOTE

IN ORDER TO REDUCE RUNOFF AND ENCOURAGE HEALTHY PLANT GROWTH, A SOIL MANAGEMENT REPORT SHALL BE COMPLETED BY THE PROJECT LANDSCAPE CONTRACTOR AS FOLLOWS: SUBMIT SOIL SAMPLES TO A LABORATORY FOR ANALYSIS AND RECOMMENDATIONS (SUNLAND ANALYTICS TESTING PACKAGE # LTP.4 OR EQUAL- PHONE: 916-852-8557). SOIL SAMPLING SHALL BE CONDUCTED IN ACCORDANCE WITH LABORATORY PROTOCOL, INCLUDING PROTOCOLS REGARDING ADEQUATE SAMPLING DEPTH FOR THE INTENDED PLANTS.

THE SOIL ANALYSIS SHALL INCLUDE: SOIL TEXTURE; INFILTRATION RATE DETERMINED BY LABORATORY TEST OR SOIL TEXTURE INFILTRATION RATE TABLE; PH; TOTAL SOLUBLE SALTS; SODIUM; PERCENT ORGANIC MATTER; AND RECOMMENDATIONS STATED IN RATES OF COMMONLY/ COMMERCIALLY AVAILABLE AMENDMENTS (CUBIC YARDS OF WEIGHT PER 1,000 SF). IN PROJECTS WITH MULTIPLE LANDSCAPE INSTALLATIONS (I.E. PRODUCTION HOME DEVELOPMENTS) A SOIL SAMPLING RATE OF 1 IN 7 LOTS OR APPROXIMATELY 15% WILL SATISFY THIS REQUIREMENT. LARGE LANDSCAPE PROJECTS SHALL SAMPLE AT A RATE EQUIVALENT TO 1 IN 7 LOTS.

THE LANDSCAPE CONTRACTOR SHALL MAKE THE THE SOIL ANALYSIS REPORT AVAILABLE, IN A TIMELY MANNER, TO THE PROFESSIONALS PREPARING THE LANDSCAPE DESIGN PLANS AND IRRIGATION DESIGN PLANS TO MAKE ANY NECESSARY ADJUSTMENTS TO THE DESIGN PLANS.

THE PROJECT APPLICANT, OR HIS/HER DESIGNEE, SHALL SUBMIT DOCUMENTATION VERIFYING IMPLEMENTATION OF SOIL ANALYSIS REPORT RECOMMENDATIONS TO THE LOCAL AGENCY WITH CERTIFICATE OF COMPLETION.

PROJECT CONSTRUCTION APPROVAL CHECKLIST

CHECK BOX	DESCRIPTION	OWNER REP. INITIALS	GC INITIALS	DATE
☐	PRE-CONSTRUCTION MEETING WITH PROJECT SCHEDULE			
☐	MATERIAL SUBMITTAL PACKAGE (DIGITAL COPY INITIAL- UPON APPROVAL, PROVIDE APPROVED HARD COPIES : 2 COPIES TO CLIENT, 1 COPY TO CLIENT IF APPLICABLE)			
☐	CONTRACTOR AND CITY TO INSPECT ARRIVAL OF PRE-PURCHASE ELEMENTS TO CONFIRM ALL ARE ACCOUNTED FOR AND IN GOOD CONDITION. SHIPMENT MUST BE SIGNED AND DATED BY ALL PARTIES.			
☐	AFTER MASS GRADING THE CONTRACTOR SHALL OBTAIN A SOILS REPORT & SUBMIT TO CLIENT REPRESENTATIVE.			
☐	SITE LAYOUT OF ALL HARDSCAPE, WALLS, ETC FOR REVIEW AND APPROVAL PRIOR TO POURING ANY CONCRETE.			
☐	ROUGH GRADING INSPECTION IN ALL PLANTING AREA			
☐	DEROCKING 12" DEEP, REMOVING ALL ROCKS, ROOTS, AND FOREIGN MATERIAL LARGER THAN 1"			
☐	FINE GRADING INSPECTION AND 12" RIPPING			
☐	SOIL AMENDMENTS AND TILL INTO TOP 6" - VERIFY AMENDMENT QUANTITIES AND SOIL AMENDMENTS WORKED INTO 6" PRIOR TO FINAL GRADING OF PLANTING AREA - HYDROSEED AREA NOT INCLUDED			
☐	INSPECTION OF LAYOUTS AND FORMING OF HARDSCAPE			
☐	INSPECTION OF LAYOUT AND FORMING OF ALL SLEEVES FROM ALL TRADES			
☐	INSPECTION OF HARDSCAPE FINISH EXAMPLES			
☐	INSPECTION OF PLANTING			
☐	INSPECTION OF UNDERGROUND UTILITY TRENCHING AND INSTALLATION, APPROVAL REQUIRED PRIOR TO BURIAL			
☐	FINAL BUILDING INSPECTION			
☐	FINAL GRADE INSPECTION AND ACCEPTANCE			
☐	FERTILIZER/ AMENDMENT TAGS. CONTRACTOR IS TO SUBMIT TAGS OF FERTILIZER(S) AND AMENDMENTS TO OWNER'S REPRESENTATIVE FOR VERIFICATION ON QUANTITIES.			
☐	CERTIFICATION OF BACKFLOW PREVENTER BY LOCAL WATER SERVICE. CONTRACTOR TO PROVIDE DOCUMENTATION TO OWNER'S REPRESENTATIVE.			
☐	WATER METER POINT OF CONNECTION. CONTRACTOR TO COORDINATE WITH PROJECT OWNER, CITY UTILITY LIAISON, AND UTILITY REPRESENTATIVE FOR INSTALLATION. CONTRACTOR TO CONTACT OWNER'S REPRESENTATIVE FOR OBSERVATION TO VERIFY.			
☐	ELECTRICAL POINT OF CONNECTION. CONTRACTOR TO COORDINATE WITH PROJECT OWNER, CITY UTILITY LIAISON, AND UTILITY REPRESENTATIVE FOR INSTALLATION. CONTRACTOR TO CONTACT OWNER'S REPRESENTATIVE FOR OBSERVATION TO VERIFY.			
☐	IRRIGATION CONTROLLER COMMUNICATION POINT OF CONNECTION- VERIFY LOCATION. CONTRACTOR RESPONSIBLE TO CONTACT CITY PARK DEPARTMENT TO OBTAIN A TELECOMMUNICATION CONNECTION AND FOR THE CONNECTION OF THE CONTROLLER TO THE INTERNET. CONTRACTOR TO CONTACT OWNER'S REPRESENTATIVE FOR OBSERVATION. ☐WIRELESS ☐HARDWARE CABLE ☐HW. TELEPHONE ☐OTHER (SPECIFY): _____ ☐NONE			
☐	MAINLINE PRESSURE TEST & TRENCH OBSERVATION. CONTRACTOR TO CONTACT OWNER'S REPRESENTATIVE FOR OBSERVATION PRIOR TO BACK FILL.			
☐	IRRIGATION OPERATION, COVERAGE TEST, LOCATION AND ELEVATION OF ALL MAINLINE TRACKING TAPE, AND IRRIGATION AUDIT (PRIOR TO PLANTING AND INSTALLATION OF MULCH OR SURFACE MATERIAL FOR DRIP SYSTEMS. FOR SPRAY SYSTEMS: AUDIT TO OCCUR PRIOR TO PLANTING.) FINAL APPROVAL OF IRRIGATION			
☐	CERTIFICATION OF IRRIGATION CONTROLLER, GROUNDING TEST, CONTROLLER OPERATION AND LAMINATED USAGE MANUAL.			
☐	APPLICATION OF PRE-EMERGENT HERBICIDE. PRODUCT APPLIED: _____ DATE OF APPLICATION: _____			
☐	PLANT MATERIAL SURFACE TREATMENT (BARK, DECOMPOSED GRANITE, GRAVEL, ETC.) OBSERVATION.			
☐	IF APPLICABLE, CONTRACTOR VERIFY CONNECTION TO CENTRAL CONTROL SYSTEM (TO CITY COMPUTER) AND TO ARRANGE FOR CITY I.T. ASSISTANCE. CONTRACTOR IS TO DEMONSTRATE TO CLIENT'S REPRESENTATIVE THAT CONTROLLER IS CONNECTED TO THE CITY CENTRAL CONTROL SYSTEM.			
☐	INITIAL ENTRY INTO MAINTENANCE PERIOD. CONTRACTOR TO CONTACT OWNER'S REPRESENTATIVE FOR OBSERVATION.			
☐	PUNCHLIST FOLLOWUP OBSERVATION FOR ENTRY INTO MAINTENANCE PERIOD. CONTRACTOR TO CONTACT OWNER'S REPRESENTATIVE FOR VERIFICATION OF PUNCHLIST ITEMS			
☐	90 DAY MAINTENANCE PERIOD START DATE:_____ PROJECTED FINISH DATE:_____			
☐	AS-BUILTS (HARD COPY AND DIGITAL) AND CONTROLLER CHART (LAMINATED). CONTRACTOR TO SUBMIT TO OWNER'S REPRESENTATIVE AND COORDINATE WITH LANDSCAPE ARCHITECT FOR AS-BUILT APPROVAL.			
☐	CLOSEOUT SUBMITTALS PER SPECIFICATIONS.			
☐	FINAL OBSERVATION. CONTRACTOR TO CONTACT OWNER'S REPRESENTATIVE FOR OBSERVATION.			
☐	CERTIFICATIONS OF COMPLETION. CONTRACTOR IS RESPONSIBLE TO SUBMIT COMPLETED CERTIFICATES OF COMPLETION FROM PROJECT APPLICANT AND LANDSCAPE ARCHITECT TO OWNER.			
☐	NOTIFICATION OF MAINTENANCE PERIOD ENDING TO OWNER.			

NOTE:
- THIS LIST OF REQUIRED SUBMITTALS AND INSPECTIONS IS FOR REFERENCE PURPOSES ONLY. SEE BOOK FORM SPECIFICATIONS AND DETAILS FOR COMPLETE SUBMITTAL AND INSPECTION REQUIREMENTS.
- PLEASE PROVIDE A MINIMUM OF 2 WORKING DAYS NOTICE FOR ALL OBSERVATIONS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE ALL SUBMITTALS AND INSPECTIONS ARE COMPLETED AS SPECIFIED IN THE CONTRACT DOCUMENTS.
- CONTRACTOR TO CONTACT OWNER'S REPRESENTATIVE FOR OBSERVATION.

LANDSCAPE DOCUMENTATION PACKAGE (LDP) CHECKLIST (DESIGN)

CHECK BOX	DESCRIPTION
☐	DATE:_____
☐	PROJECT APPLICANT: (CONTRACTOR) _____
☐	PROJECT ADDRESS: 4300 FREEMARK AVENUE, MERCED CA, 95348 PROJECT COUNTY APN: 224-290-002
☐	TOTAL LANDSCAPE AREA (IN SQUARE FEET): 350,0129 SF
☐	PROJECT TYPE (LANDSCAPE CONSTRUCTION-PARK)
☐	WATER SUPPLY TYPE AND NAME OF LOCAL WATER PURVEYOR: CITY OF MERCED WATER DIVISION - (209) 388-7000
☐	CHECKLIST OF ALL DOCUMENTS IN THE LDP
☐	CONTACT INFORMATION FOR THE APPLICANT AND PROPERTY OWNER: APPLICANT (CONTRACTOR): PROPERTY OWNER: CITY OF MERCED 678 WEST 18TH STREET MERCED, CA 95340
☐	_____ APPLICANT SIGNATURE (CONTRACTOR)
☐	WATER EFFICIENT LANDSCAPE WORKSHEET INCLUDING: 1) HYDROZONE INFORMATION TABLE 2) WATER BUDGET CALCULATIONS INCLUDING: a. MAX APPLIED WATER ALLOWANCE (MAWA) INCLUDING WATER FEATURES b. ESTIMATED TOTAL WATER USE (ETWU)
☐	SOILS MANAGEMENT REPORT: TO BE PROVIDED BY CONTRACTOR
☐	CONSTRUCTION DESIGN PLAN: SHEETS L2.0A & L2.0B
☐	LANDSCAPE DESIGN PLAN: SHEET L3.0
☐	IRRIGATION DESIGN PLAN: SHEET L4.0
☐	GRADING DESIGN PLAN: C-5
☐	ELECTRICAL PLAN: E5.0

SOIL REPORT NOTE:

THE PROJECT LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR OBTAINING SOILS ANALYSIS OF SITE SOIL FROM AN ANALYTICAL LABORATORY AND AMENDING THE SOIL AS PER THE RECOMMENDATIONS FOR LANDSCAPES STATED IN RATES OF COMMONLY AVAILABLE AMENDMENTS (CUBIC YARDS OR WEIGHT PER 1,000 SF). RECOMMENDATIONS PENDING LABORATORY ANALYSIS.

FIRE NOTE:

1. FIRE HYDRANTS AND ACCESS ROADS SHALL BE INSTALLED, TESTED AND APPROVED AND SHALL BE MAINTAINED SERVICEABLE PRIOR TO AND DURING ALL PHASES OF DEVELOPMENT. THE 4½ INCH OUTLET SHALL FACE THE ACCESS LANE.
2. PROVIDE APPROVED POLICE/FIRE BYPASS LOCK ("BEST" PADLOCK MODEL 21B700 SERIES OR ELECTRIC CYLINDER SWITCH MODEL 1W7B2) ON DRIVE ACCESS GATE(S). ALL ELECTRIFIED GATES SHALL BE EQUIPPED WITH THE BEST ELECTRIC CYLINDER LOCK 1W7B2. A KNOX PADLOCK MAY NOT BE USED IN PLACE OF THE BEST PADLOCK MODEL 21B700.
3. ACCESS SHALL BE MAINTAINED WITH A MINIMUM CLEAR DRIVE WIDTH OF AT LEAST 20 FEET. ADDITIONAL CLEAR WIDTHS MAY BE REQUIRED AND SHALL BE APPROVED BY THE FIRE MARSHAL (OR DESIGNEE).
4. AN APPROVED FIRE/POLICE PADLOCK SHALL BE INSTALLED ON GATES USED SOLELY FOR EMERGENCY VEHICLE ACCESS. FIRE/POLICE PADLOCKS MAY BE USED IN CONJUNCTION WITH OTHER APPROVED LOCKING DEVICES. PADLOCKS SHALL BE AN APPROVED CITY BYPASS LOCK.
5. ENSURE THAT ALL GATES HAVE FIRE DEPARTMENT ACCESS APPROVED LOCKING DEVICES.

MDG
MELTONDESIGNGROUP
820 BROADWAY ST.
CHICO, CA 95928
(530) 899-1616
meltondg.com

LICENSE

REGISTERED LANDSCAPE ARCHITECT
GREG MELTON #2671
EXP. 11-26
STATE OF CALIFORNIA

CONSULTANT

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

PROJECT CHECKLIST

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
4.		
5.		
6.		
7.		
8.		

PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

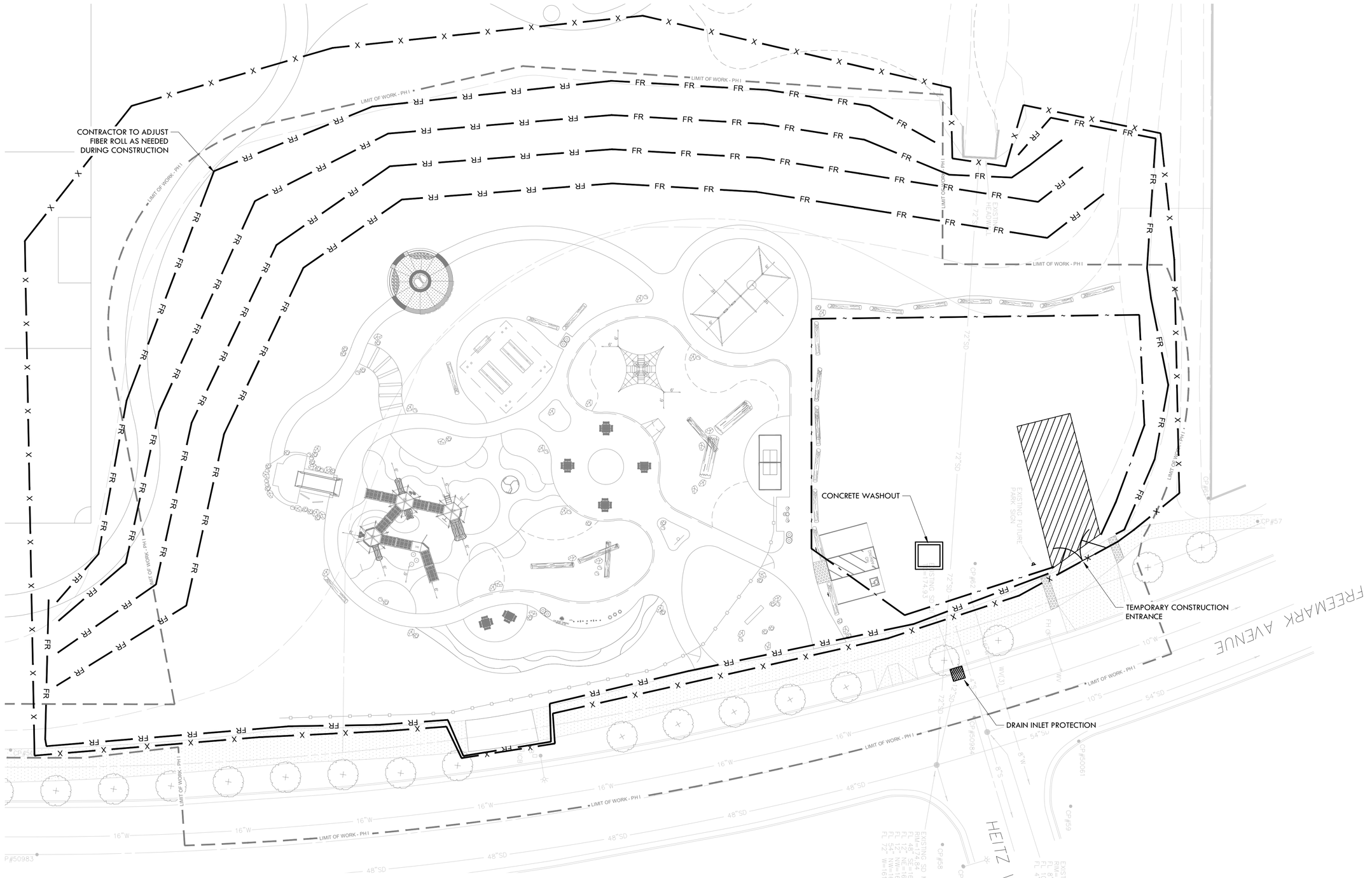
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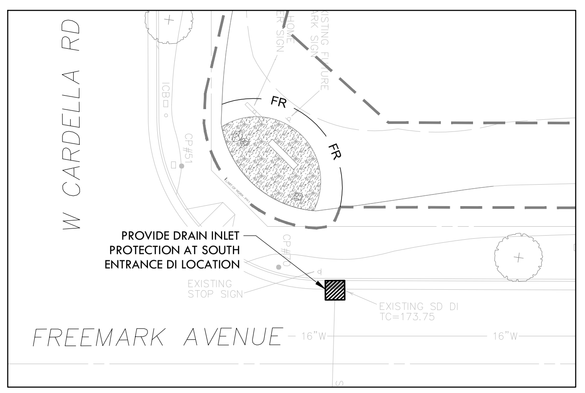
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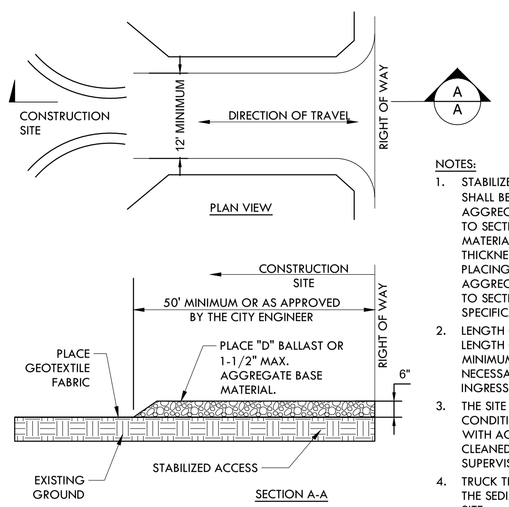
SHEET 02 OF 31

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Page 27 of 412
FILE NAME: G:\MDG\2600-2699\2615 General Vang Pao Park MP and Playground\2615 CAD\CDs\SHEETS\2615-L0.1-CIC CHKLST.dwg
PLOT DATE: February 26, 2026 - 7:12 PM





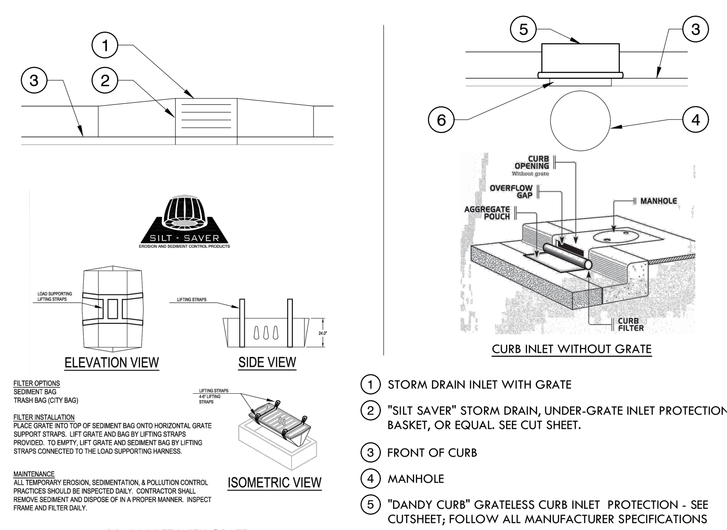


NOTES:

1. STABILIZED CONSTRUCTION SITE ACCESS SHALL BE CONSTRUCTED OF 1-1/2" MAXIMUM AGGREGATE BASE MATERIAL CONFORMING TO SECTION 26 OF STATE SPECIFICATIONS. MATERIAL SHALL BE PLACED TO A MINIMUM THICKNESS OF SIX INCHES. THE METHOD OF PLACING, SPREADING AND COMPACTING AGGREGATE BASE MATERIAL SHALL CONFORM TO SECTION 26 OF THE STATE SPECIFICATIONS.
2. LENGTH OF SITE ACCESS SHALL BE A MINIMUM LENGTH OF FIFTY FEET. WIDTH SHALL BE A MINIMUM OF TWENTY FEET, OR GREATER AS NECESSARY TO COVER ALL VEHICULAR INGRESS AND EGRESS.
3. THE SITE ACCESS SHALL BE KEPT IN GOOD CONDITION BY OCCASIONAL TOP DRESSING WITH AGGREGATE BASE MATERIAL OR CLEANED AS DIRECTED BY THE PROJECT SUPERVISOR.
4. TRUCK TIRES SHALL BE WASHED DOWN AND THE SEDIMENT CONTAINED ON THE PROJECT SITE.

1 L1.0 TEMPORARY CONSTRUCTION SITE ACCESS

N.T.S.



1. STORM DRAIN INLET WITH GRATE
2. "SILT SAVER" STORM DRAIN, UNDER-GRATE INLET PROTECTION BASKET, OR EQUAL. SEE CUT SHEET.
3. FRONT OF CURB
4. MANHOLE
5. "DANDY CURB" GRATELESS CURB INLET PROTECTION - SEE CUTSHEET; FOLLOW ALL MANUFACTURER SPECIFICATIONS
6. CURB INLET WITH NO GRATE

2 L1.0 DRAIN INLET PROTECTION - WITH GRATE AND NO GRATE

N.T.S.

SYMBOL LEGEND

SYMBOL	DESCRIPTION	DETAIL
FR	FIBER ROLL	3/L1.0
X	PROPOSED CONSTRUCTION FENCING. CONTRACTOR TO LOCATE IN FIELD WITH OWNER'S APPROVAL. DO NOT OBSTRUCT ACCESS TO HYDRANTS, FDC, AND THE PIV.	SEE SPECIFICATIONS
~	PROPOSED STAGING AREA	
	DRAIN INLET PROTECTION	2/L1.0
	TEMPORARY CONSTRUCTION ENTRANCE PROVIDE BASE ROCK OVER ALL CURB & SIDEWALK TO PROTECT CONCRETE AND ASPHALT	1/L1.0
	CONCRETE WASHOUT	4/L1.0

EROSION CONTROL GENERAL NOTES

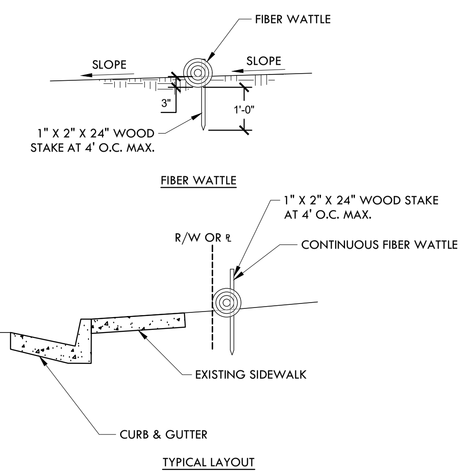
1. ALL EROSION CONTROL MEASURES SHALL CONFORM TO CITY OF MERCED STANDARDS AND THE EROSION CONTROL PLANS SHOWN ON THE CONSTRUCTION DRAWINGS.
2. EROSION CONTROL DEVICES TO BE IN PLACE BEFORE THE START OF AND THROUGHOUT CONSTRUCTION
3. CONTRACTOR SHALL PLACE STABILIZED CONSTRUCTION SITE ACCESS PER DETAIL ON THIS SHEET.
4. CONTRACTOR RESPONSIBLE FOR STORM WATER POLLUTION PLAN AND SHALL BE AVAILABLE ON SITE AT ALL TIMES.
5. CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR STATE WATER RESOURCES CONTROL BOARD.
6. SWPPP TO BE IN IN PLACE BEFORE START OF CONSTRUCTION AND MAINTAINED THROUGHOUT IN ACCORDANCE TO SWPPP STANDARDS.
7. CONTRACTOR SHALL PROVIDE FIBER ROLL AT BACK OF CURB OR BANK AND IN AREAS REQUIRED BY THIS EROSION CONTROL PLAN.
   - 7.1. INSPECTION BY CONTRACTOR SHALL BE FREQUENT. REPAIRS AND/OR REPLACEMENT SHALL BE MADE PROMPTLY; AS REQUIRED.
   - 7.2. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF NINE INCHES.
8. CONTRACTOR SHALL MAINTAIN ALL FIBER ROLL AND OTHER EROSION CONTROL DEVICES THROUGHOUT CONSTRUCTION. SILT BUILDUP IN SILTING BASIN AREA SHALL BE REMOVED AS NECESSARY. REMOVE ALL BALES AND POLLUTION PREVENTION DEVICES AT THE END OF CONSTRUCTION.
9. INTERIM EROSION CONTROL MEASURES MAY BE NEEDED AND SHALL BE INSTALLED DURING CONSTRUCTION TO ASSURE ADEQUATE EROSION CONTROL FACILITIES ARE IN PLACE AT ALL TIMES.
10. AFTER THE HARDSCAPES ARE COMPLETED GRAVEL BAGS, FILTER FABRIC AND DRAIN ROCK SHALL BE PLACED AROUND EACH DROP INLET.
11. CONTRACTOR SHALL USE DUST CONTROL MEASURES IN THE FORM OF WATER APPLICATION TO ALL EXPOSED SOIL SURFACES TO PREVENT THE TRANSPORT OF SOIL FROM EXPOSED SURFACES ON CONSTRUCTION SITES IN THE FORM OF AIRBORNE PARTICULATES. WATERING OF EXPOSED SOIL SURFACES SHALL OCCUR AT LEAST TWICE DAILY, PREFERABLY IN THE LATE MORNING AND AFTER WORK IS DONE FOR THE DAY. ALL CLEARING, GRADING, EARTH MOVING OR EXCAVATION ACTIVITIES SHALL CEASE WHEN WINDS EXCEED 15 MPH AVERAGED OVER 1 HOUR.
12. ANY SOIL MATERIAL CARRIED ONTO STREET SURFACES BY CONSTRUCTION EQUIPMENT SHALL BE REMOVED ON A DAILY BASIS. (BROOM CLEAN- DO NOT USE WATER TO WASH THE STREET).
13. HAUL TRUCKS SHALL BE COVERED WITH TARPAULINS OR OTHER EFFECTIVE COVERS AT ALL TIMES.
14. PRIOR TO PLACEMENT OF LANDSCAPING, REMOVE TEMPORARY EROSION CONTROL MEASURES (FIBER ROLLS).
15. STOCKPILES NOT USED WITHIN THE LAST 14 DAYS MUST BE COVERED WITH AN EROSION CONTROL BLANKET OR PLASTIC SHEETING AND CONTAINED WITH A FIBER ROLL OR GRAVEL BAG BERM.

CONSTRUCTION ACCESS NOTE:

1. CONSTRUCTION ENTRY, TRACK OUT, AND CONCRETE WASHOUT AREA LOCATIONS TO BE LOCATED BY CONTRACTOR ALONG FREEMARK AVENUE. FINAL LOCATION PENDING APPROVAL BY OWNER.
2. PROPOSED STAGING AREA IN FUTURE PARKING LOT AREA (CONTRACTOR TO DECIDE IN FIELD) TO BE RE-PAVED AND FINISHED AT PROJECT COMPLETION.
3. ASSESS TEMPORARY CONSTRUCTION FENCING CONNECTIONS ON SITE.
4. CONTRACTOR RESPONSIBLE TO REPLACE IN KIND ANY DAMAGED EXISTING ELEMENTS DURING CONSTRUCTION OR MOBILIZATION OF THE PROJECT.

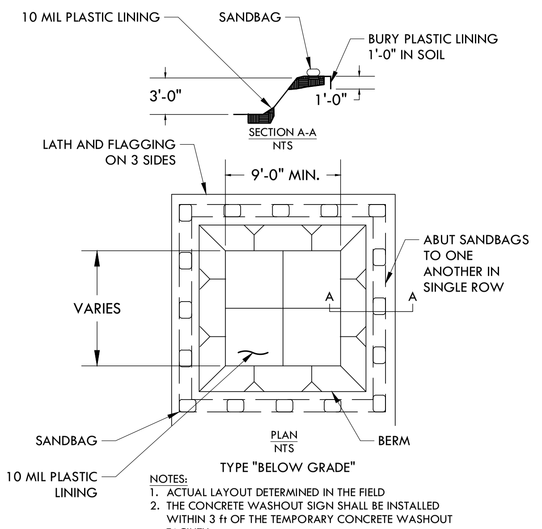
SWPPP NOTE:

1. SWPPP QUALIFIED CONTRACTOR (LRP - LEGALLY RESPONSIBLE PERSON) IS TO PROVIDE NOI FORM TO THE STATE WATER RESOURCES CONTROL BOARD FOR A CONSTRUCTION GENERAL PERMIT, PERMIT # AND SWPPP PLAN. (CONTACT LA FOR ANY SUPPORTING SITE PLANS OR TAKE OFFS)
2. CONTRACTOR TO PAY ALL FEES.
3. CONTRACTOR IS TO HAVE A COMPLETE NOI AVAILABLE ON SITE AND AVAILABLE FOR RWQCB AND CITY INSPECTORS THOUGH OUT PROJECT.
4. LRP TO ELECTRONICALLY SUBMIT (PRD'S) PERMIT REGISTRATION DOCUMENTS PRIOR TO CONSTRUCTION ACTIVITIES WITH (SMARTS) AT SWRCB (926) 341-537



3 L1.0 FIBER ROLL LAYOUT W/ STAKES AT SITE PERIMETER

1/2" = 1'-0"



NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 3 ft OF THE TEMPORARY CONCRETE WASHOUT FACILITY

4 L1.0 CONCRETE WASHOUT

NTS



0 20 40

SCALE: 1" = 20'
@30x42

811 Know what's BELOW CALL before you dig.

MDG MELTONDESIGNGROUP
820 BROADWAY ST.
CHICO, CA 95928
(530) 899-1616
meltondg.com

LICENSE

REGISTERED LANDSCAPE ARCHITECT GREG MELTON #3217 EXP. 11-26 STATE OF CALIFORNIA

CONSULTANT

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

EROSION CONTROL PLAN

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
4.		
5.		
6.		
7.		
8.		

PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

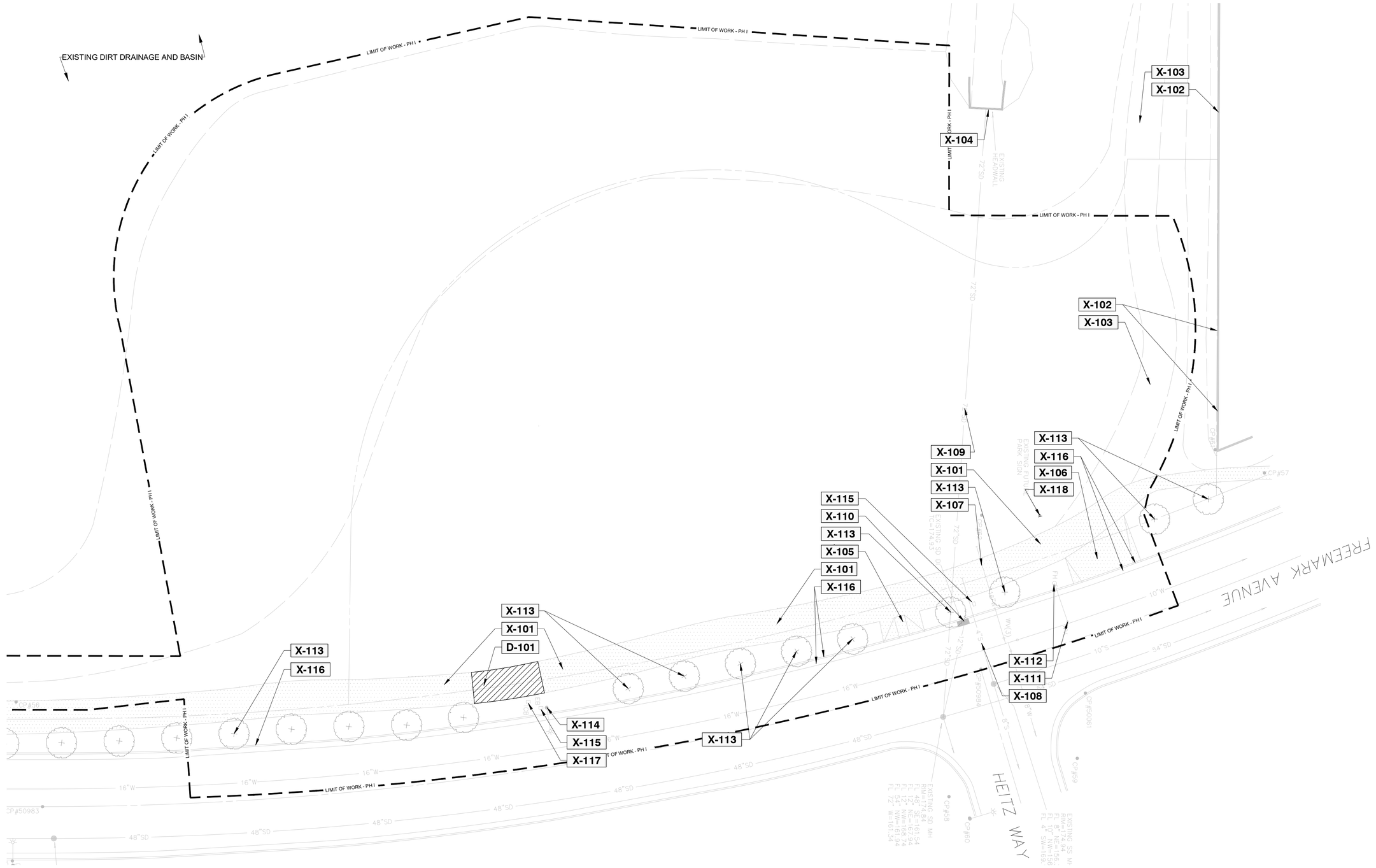
SHEET NUMBER

L1.0

SHEET ___ OF 31

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PLOT DATE: February 26, 2026 - 7:12 PM
FILE NAME: G:\MDG\2600-2699\2615 General Vang Pao Park AP and Playground\2615 CAD\CDs\SHEETS\2615-L1.0-EROS.dwg


EXISTING DIRT DRAINAGE AND BASIN
LIMIT OF WORK - PH I
X-103
X-102
X-104
X-102
X-103
X-109
X-101
X-113
X-107
X-113
X-116
X-106
X-118
X-115
X-110
X-113
X-105
X-101
X-116
X-113
X-101
D-101
X-113
X-116
X-114
X-115
X-117
X-113
X-112
X-111
X-108
FREEMARK AVENUE
HEITZ WAY
EXISTING SD
EXISTING FIRE HYDRANT
EXISTING PARK SIGN
EXISTING CURB
EXISTING SD DI
EXISTING STOP SIGN
CP #57
CP #58
CP #59
CP #60
CP #61
CP #62
CP #63
CP #64
CP #65
CP #66
CP #67
CP #68
CP #69
CP #70
CP #71
CP #72
CP #73
CP #74
CP #75
CP #76
CP

UTILITY NOTES

1. CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH OF ALL UTILITY TIE-IN POINTS AND SHALL NOTIFY THE ENGINEER OF ANY AND ALL DISCREPANCIES BETWEEN FIELD MEASUREMENTS AND INFORMATION SHOWN ON THE PLANS PRIOR TO THE START OF CONSTRUCTION.

2. PROVIDE 10' MINIMUM CLEAR HORIZONTAL SEPARATION BETWEEN ALL SEWER AND WATER LINES UNLESS NOTED.

3. PROVIDE 3.5' MINIMUM COVER ON ALL PROPOSED WATER MAINS AND WATER SERVICES.

4. PER STATE HEALTH DEPARTMENT REQUIREMENTS, WHERE A PROPOSED SEWER MAIN OR LATERAL CROSSES ABOVE OR WITHIN 12" OF A WATER LINE, PROVIDE A 20' LONG CONTINUOUS SECTION OF CLASS 200 SEWER LINE (DR14 PER AWWA C900) CENTERED OVER THE PIPE BEING CROSSED.

5. PROVIDE THRUST BLOCKS PER CITY OF MERCED STANDARD DRAWINGS W-6 AND W-7.

6. PROVIDE BACKFILL AND RESURFACING FOR PROPOSED UTILITY LINES PER CITY OF MERCED STANDARD DRAWINGS T-1 THROUGH T-5.

7. WATER TRANSMISSION LINES SHALL BE POLYVINYL CHLORIDE PRESSURE PIPE CLASS 150 DRIB FOR 12" AND SMALLER AND CLASS 235 DRIB FOR 14" AND LARGER AND SHALL CONFORM TO AWWA C-900 LATEST EDITION FOR 12" AND SMALLER AND AWWA C905 LATEST EDITION FOR 14" AND LARGER, UNLESS OTHERWISE INDICATED ON THE CONSTRUCTION PLANS. WHERE PLACED WITHIN 10' OF A NON-POTABLE PIPELINE, WATER LINES SHALL BE CLASS 200 PRESSURE-RATED PVC WATER PIPE (DR 14 PER AWWA C900-97 & C905-97) IN ACCORDANCE WITH CALIFORNIA DEPARTMENT OF HEALTH SERVICES REQUIREMENTS. ONSITE DOMESTIC WATER SERVICE LINES SHALL BE SCHEDULE 40 PVC UNLESS NOTED OTHERWISE.

8. SANITARY SEWER LINES SHALL BE SDR-26 PVC AND SHALL CONFORM TO ASTM D3034.

9. STORM DRAIN LINES SHALL BE SDR-26 PVC AND SHALL CONFORM TO ASTM D3034 OR HIGH DENSITY POLYETHYLENE PIPE, ADS N-12 CORRUGATED WATERTIGHT PIPE (OR APPROVED EQUAL). ALL STORM DRAIN LINES SHALL BE INSTALLED IN ACCORDANCE WITH PIPE MANUFACTURER'S RECOMMENDATIONS.

13. A CONTINUOUS 14 GAUGE BLUE TRACER WIRE IS REQUIRED ON ALL ONSITE DOMESTIC WATER LINE, ON ALL ONSITE LANDSCAPE IRRIGATION WATER LINE, AND ON ALL ONSITE FIRE PROTECTION WATER LINE. TERMINATE ABOVE GROUND AT BOTH ENDS.

23. THE CONTRACTOR SHALL NOTIFY THE AGENCIES HAVING JURISDICTION AT LEAST 48 HOURS PRIOR TO PERFORMING ANY POTHOLING OR OTHER FIELD INVESTIGATION WORK.

24. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY OF ALL BRACING, SHORING, AND SHEATHING PERFORMED DURING THE PROJECT. THE CONTRACTOR SHALL MAINTAIN ON-SITE, A SPECIAL PERMIT FROM CAL-OSHA, FOR ALL UTILITY TRENCHES 5 FEET OR MORE IN DEPTH.

25. UNLESS DIRECTED OTHERWISE, BY THE OWNER/CITY, THE CONTRACTOR SHALL MAINTAIN AS-BUILT DRAWINGS, INCLUDING ALL FIELD INVESTIGATION AND POTHOLED INFORMATION.

26. THE CONTRACTOR SHALL PERFORM ALL CONSTRUCTION, TESTING, AND DISINFECTION, IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

27. ALL UTILITY MAINS AND SERVICE LINES SHALL BE KEPT IN CONSTANT SERVICE DURING THE CONSTRUCTION OF THE PROJECT, UNLESS APPROVED BY THE OWNER/CITY.

28. WATER PIPES CROSSING SEWER OR STORM DRAIN PIPES SHALL BE LAID NOT LESS THAN 12 INCHES ABOVE THE TOP OF THE SEWER OR STORM DRAIN PIPES.

BENCHMARK / CONTROL POINTS

BRE CONTROL POINT#70 / CITY OF MERCED BENCHMARK NO. BM-39
FOUND BRASS DISC IN MONUMENT WELL, NORTHWEST CORNER OF CARDELLA ROAD AND FREEMARK AVENUE, BEHIND THE BACK OF CURB, 11' SOUTH OF THE NORTH END RETURN

NORTHING=1948754.9980
EASTING=6566828.3620
ELEVATION=173.70 (NAVD88 DATUM)

SITE CONTROL POINTS:

BRE CONTROL POINT#51
SET MAG NAIL
NORTHING=1948732.3280
EASTING=6566804.8789
ELEVATION=174.27

BRE CONTROL POINT#52
SET MAG NAIL
NORTHING=1948598.0104
EASTING=6566870.0700
ELEVATION=173.94

BRE CONTROL POINT#53
SET MAG NAIL
NORTHING=1948604.6491
EASTING=6566620.9652
ELEVATION=173.92

BRE CONTROL POINT#54
SET MAG NAIL
NORTHING=1948686.2152
EASTING=6566614.5488
ELEVATION=173.45

BRE CONTROL POINT#55
SET CHISELED "X"
NORTHING=1949129.0063
EASTING=6566669.6375
ELEVATION=174.39

BRE CONTROL POINT#56
SET CHISELED "X"
NORTHING=1949121.1979
EASTING=6566811.4903
ELEVATION=175.36

BRE CONTROL POINT#57
SET CHISELED "X"
NORTHING=1949577.6310
EASTING=6566726.4101
ELEVATION=175.54

BRE CONTROL POINT#58
FOUND BRASS CAP
NORTHING=1949462.5841
EASTING=6566645.1458
ELEVATION=174.63

BRE CONTROL POINT#59
FOUND BRASS CAP
NORTHING=1949509.4733
EASTING=6566830.9788
ELEVATION=174.66

BRE CONTROL POINT#60
SET RETROTARGET
NORTHING=1949470.1201
EASTING=6566852.9728
ELEVATION=80.78

BRE CONTROL POINT#61
SET RETROTARGET
NORTHING=1949559.6329
EASTING=6566717.9494
ELEVATION=184.91

BRE CONTROL POINT#62
SET RETROTARGET
NORTHING=1949474.2510
EASTING=6566742.1713
ELEVATION=178.28

BRE CONTROL POINT#63
SET RETROTARGET
NORTHING=1949120.4485
EASTING=6566571.4514
ELEVATION=183.27

BRE CONTROL POINT#64
SET RETROTARGET
NORTHING=1949119.3905
EASTING=6566671.4865
ELEVATION=183.30

BRE CONTROL POINT#65
SET RETROTARGET
NORTHING=1948919.0670
EASTING=6566828.5781
ELEVATION=181.56

BRE CONTROL POINT#66
SET RETROTARGET
NORTHING=1948912.8833
EASTING=6566901.2859
ELEVATION=182.00

BRE CONTROL POINT#67
SET RETROTARGET
NORTHING=1948729.3773
EASTING=6566896.6053
ELEVATION=182.23

BRE CONTROL POINT#68
SET RETROTARGET
NORTHING=1948631.7933
EASTING=6566791.2277
ELEVATION=182.69

BRE CONTROL POINT#69
SET RETROTARGET
NORTHING=1948728.9446
EASTING=6566751.1543
ELEVATION=182.15

BRE CONTROL POINT#71
SET RETROTARGET
NORTHING=1948574.3248
EASTING=6566395.4310
ELEVATION=182.72

BRE CONTROL POINT#72
SET RETROTARGET
NORTHING=1948988.5480
EASTING=6566420.3742
ELEVATION=182.98

BRE CONTROL POINT#50000
FOUND BRASS CAP
NORTHING=1943435.0803
EASTING=6566545.4115
ELEVATION=171.72

BRE CONTROL POINT#50001
FOUND BRASS CAP
NORTHING=1943336.7937
EASTING=6566592.2487
ELEVATION=170.58

BRE CONTROL POINT#50011
SET CHISELED SQUARE
ELEVATION=175.03

BRE CONTROL POINT#50014
FOUND BRASS CAP
NORTHING=1948754.9800
EASTING=6566828.3650
ELEVATION=173.69

BRE CONTROL POINT#50061
SET CHISELED SQUARE
ELEVATION=174.93

BRE CONTROL POINT#50981
FOUND 60D NAIL
NORTHING=1948680.3419
EASTING=6566851.9955
ELEVATION=174.73

BRE CONTROL POINT#50983
FOUND 3/4" IRON PIPE
NORTHING=1949131.0007
EASTING=6566849.7760
ELEVATION=174.82

BRE CONTROL POINT#50984
FOUND 3/4" IRON PIPE
NORTHING=1949474.1152
EASTING=6566798.5213
ELEVATION=174.89

BRE CONTROL POINT#50985
FOUND 3/4" IRON PIPE
NORTHING=1949627.2918
EASTING=6566740.5828
ELEVATION=175.13

ABBREVIATIONS

AB	AGGREGATE BASE	NG	NATURAL GROUND
AC	ASPHALTIC CONCRETE	OC	ON CENTER
AL	AREA LIGHT	OHP	OVERHEAD POWER
AP	ANCHOR POLE	P	PAVEMENT
BC	BEGINNING OF CURVE	PB	PULL BOX
BCM	BRASS CAP MONUMENT	PP	POWER POLE
BFP	BACKFLOW PREVENTER	PRC	POINT OF REVERSE CURVE
BM	BENCHMARK	R	RADIUS
BO	BLOW OFF	RAIL	TOP OF RAIL
C	CONCRETE	RD	ROOF DRAIN
CDR	CENTER OF DIRT ROAD	ROW	RIGHT-OF-WAY
CL	CENTERLINE	SCB	SPRINKLER CONTROL BOX
CNS	COMPACTED NATIVE SOIL	SCO	SEWER CLEANOUT
CP	CONTROL POINT	SD	STORM DRAIN
CR	CROWN	SF	SQUARE FEET
D	DIRT	SH	SPRINKLER HEAD
DA	DRIVE APPROACH	SL	STREET LIGHT
DI	DRAIN INLET	SP	SERVICE POLE
DWG	DRAWING	SS	SANITARY SEWER
EB	ELECTRICAL BOX	STA	STATION
EC	END OF CURVE	STD	STANDARD
EDR	EDGE OF DIRT ROAD	STR	STRIPE
EM	ELECTRICAL METER	TBM	TEMPORARY BENCHMARK
EO	ELECTRICAL OUTLET	TC	TOP OF CURB
EP	EDGE OF PAVEMENT	TCB	TRAFFIC CONTROL BOX
ETW	EDGE OF TRAVELED WAY	TD	TOP OF DIKE
EV	ELECTRICAL VAULT	TF	TOP OF FOOTING
FF	FINISH FLOOR	TMH	TELEPHONE MANHOLE
FG	FINISH GRADE	TOE	TOE OF SLOPE
FH	FIRE HYDRANT	TOP	TOP OF SLOPE
FL	FLOW LINE	TP	TELEPHONE POLE
GB	GRADE BREAK	TPT	TRAVERSE POINT
GM	GAS METER	TR	TELEPHONE RISER
GP	GUARD POST	TS	TOP OF PLAY/EWF SURFACE
GPT	GRID POINT	TSB	TRAFFIC SIGNAL BOX
GR	GAS RISER	TW	TOP OF WALL
GV	GAS VALVE	UE	UNDERGROUND ELECTRICAL
GW	GUY WIRE	UG	UNDERGROUND GAS
HB	HOSE BIB	US	UNDERGROUND SEWER
HDWL	CONCRETE HEADWALL	USD	UNDERGROUND STORM DRAIN
HMA	HOT MIX ASPHALT	UT	UNDERGROUND TELECOM
HPT	HINGE POINT	UU	UNDERGROUND UTILITY
IRR	IRRIGATION	UW	UNDERGROUND WATER
IP	IRON PIPE	VG	VALLEY GUTTER
IR	IRRIGATION RISER	W	WATER
IV	IRRIGATION VALVE	WCR	WHEELCHAIR RAMP
LIP	LIP OF GUTTER	WM	WATER METER
LPT	LOW POINT	WS	WATER SERVICE
MB	MAILBOX	WV	WATER VALVE
MH	MANHOLE		

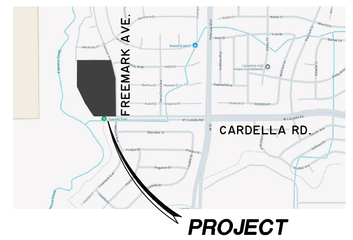
LEGEND

- EXISTING PROPERTY LINE
- EXISTING CURB, GUTTER, AND/OR SIDEWALK
- EDGE OF EXISTING PAVEMENT
- EXISTING CHAIN LINK FENCE
- EXISTING WOOD FENCE
- EXISTING BARBED WIRE FENCE
- EXISTING SIGN UNLESS NOTED
- 286.51 NG — EXISTING GRADE
- EXISTING AREA LIGHT
- EXISTING STREET LIGHT
- PROPOSED STREET LIGHT
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- EXISTING TIMBER BARRICADE
- UTIL — EXISTING UNDERGROUND UTILITY LINE; FIELD VERIFY LOCATION PRIOR TO CONSTRUCTION
- EXISTING TREE
- ACCESSIBLE PARKING STALL
- PAVEMENT TO BE STRIPED AS LOADING / UNLOADING ZONE
- PROPOSED CONCRETE IMPROVEMENTS
- PROPOSED LIGHT DUTY A.C. PAVEMENT UNLESS NOTED
- PROPOSED HEAVY DUTY A.C. PAVEMENT UNLESS NOTED
- PROVIDE 3' WIDE TRUNCATED DOME WARNING DEVICE PER SITE AND BUILDING PLANS
- PROPOSED LIGHT PER SITE AND ELECTRICAL PLANS
- PROPOSED DRAINAGE SWALE; PROVIDE 2% MINIMUM SLOPE WITHIN 10' OF A BUILDING, 1.0% MINIMUM SLOPE OTHERWISE
- PROPOSED FENCE PER SITE AND BUILDING PLANS UNLESS NOTED OTHERWISE
- PROPOSED CURB, GUTTER, AND/OR SIDEWALK PER CITY STD. DWGS. SCG-1 THROUGH SCG-5
- TC=300.00 — PROPOSED GRADE

GRADING NOTES

1. ALL SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR, IF DAMAGED, RESET BY A REGISTERED CIVIL ENGINEER OR LICENSED LAND SURVEYOR.
2. ALL GRADING AND FILLING SHALL BE DESIGNED AS "ENGINEERED GRADING" AND SHALL COMPLY WITH THE 2019 EDITION OF THE CALIFORNIA BUILDING CODE.
3. ESTIMATED EXCAVATION (CUT) = 650 C.Y.± ESTIMATED EMBANKMENT (FILL) = 330 C.Y.± [QUANTITIES ASSUME 0.20' ONSITE STRIPPING / SUBSIDENCE, 20% SHRINKAGE, AND 6" FOUNDATION AND PAVEMENT SECTIONS.] QUANTITIES SHOWN ARE FOR FEE PURPOSES ONLY. THE CONTRACTOR SHALL SATISFY HIMSELF AS TO THE POSSIBILITY OF IMPORT OR EXPORT, AND SUBMISSION OF A BID SHALL BE DEEMED CONCLUSIVE EVIDENCE OF HIS INVESTIGATION INTO SUCH POSSIBILITY; SAID INVESTIGATION BEING REFLECTED IN HIS BID.
4. NO DRAINAGE SHALL BE ALLOWED TO ADJACENT PROPERTIES.
7. A SOILS GRADING REPORT PREPARED BY THE SOILS ENGINEER AND IN CONFORMANCE WITH THE LATEST REVISION OF THE CALIFORNIA BUILDING CODE SHALL BE SUBMITTED UPON COMPLETION OF GRADING.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION AND PROTECTION OF ALL UNDERGROUND PIPES, CONDUITS, AND OTHER IMPROVEMENTS WHETHER SHOWN ON THE PLANS OR NOT. THE INFORMATION ON THE PLANS IS AS ACCURATE AS COULD BE OBTAINED, BUT THE ENGINEER NOR THE OWNER CAN GUARANTEE THEIR EXTREME ACCURACY OR COMPLETENESS RELATIVE TO THE LOCATION, SIZES, DIMENSIONS, DEPTHS, AND CHARACTER OF PIPES, CONDUITS, STRUCTURES, OR UTILITIES LOCATED ABOVE GROUND OR UNDERGROUND.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF ALL EXISTING GRADES, EARTHWORK QUANTITIES, DEMOLITION OF SURFACE AND UNDERGROUND FACILITIES BEFORE COMMENCING WORK.
10. RECOMMENDATIONS AS OUTLINED IN THE PRELIMINARY SOILS REPORT AND/OR IN THE GEOLOGY REPORT SHALL BECOME A PART OF THIS PLAN.
11. CONSTRUCTION CONTRACTOR AGREES THAT, IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR AGREES TO DEFEND, INDEMNIFY, AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONAL.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS (INCLUDING, BUT NOT LIMITED TO, ENCROACHMENT PERMIT, DUST CONTROL PERMIT, SITE UTILITY PERMIT, AND STORM WATER DISCHARGE PERMIT) PRIOR TO EXCAVATION.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A (NO FEE) ENCROACHMENT PERMIT PRIOR TO CONDUCTING ANY WORK WITHIN PUBLIC RIGHT-OF-WAY.
16. A 2% SLOPE SHALL BE PROVIDED AWAY FROM THE PROPOSED BUILDING FOR A MINIMUM OF 10 FEET, WHERE PHYSICAL OBSTRUCTIONS OR LOT LINES PROHIBIT 10 FEET OF HORIZONTAL DISTANCE, A 2% SLOPE SHALL BE PROVIDED TO AN APPROVED ALTERNATIVE METHOD OF DIVERTING WATER AWAY FROM THE FOUNDATION. SWALES USED FOR THIS PURPOSE SHALL BE SLOPED AT 2% MINIMUM WHERE LOCATED WITHIN 10 FEET OF THE FOUNDATION. A MINIMUM VERTICAL SEPARATION OF 8" SHALL BE PROVIDED BETWEEN CONCRETE FINISH FLOOR GRADE AND ADJACENT DIRT GRADE WOOD-FRAMED STRUCTURES. (NOTE: THE 8" VERTICAL SEPARATION REQUIREMENT MAY BE ELIMINATED WHERE A 12" MINIMUM WIDTH CONCRETE MOWSTRIP IS PROVIDED; SEE SITE, BUILDING AND GRADING PLANS)
17. GRADES ALONG PROPERTY LINE SHALL MATCH EXISTING GRADES WHERE POSSIBLE. GRADE DIFFERENTIALS ACROSS ADJACENT PROPERTY LINES SHALL BE HANDLED IN THE FOLLOWING MANNER:
    A. 0" TO 11.99": SLOPE TO MATCH EXISTING GROUND AT 2:1 MAXIMUM SLOPE OR PROVIDE SELF-SUPPORTING WOOD RETAINING BOARD
    B. 12" AND GREATER: CONSTRUCT RETAINING WALL (TO BE ENGINEERED BY OTHERS AND APPROVED UNDER SEPARATE BUILDING PERMIT) OR OBTAIN SLOPE EASEMENT(S) FROM ADJACENT PROPERTY OWNERS (TO BE OBTAINED BY THE DEVELOPER).
20. MAXIMUM CROSS SLOPE SHALL BE 2% AT ANY ACCESSIBLE PATH OF TRAVEL AND AT DOOR AND GATE LANDINGS.
21. ALL FILLS USED TO SUPPORT THE FOUNDATIONS OF ANY BUILDING OR STRUCTURE SHALL BE PLACED UNDER THE DIRECTION OF THE CITY ENGINEER, AND THE PLACEMENT OF THE FILL SHALL BE OBSERVED BY THE CITY ENGINEER OR HIS QUALIFIED REPRESENTATIVE. A SOILS INVESTIGATION REPORT AND A REPORT OF SATISFACTORY PLACEMENT OF FILL, BOTH ACCEPTABLE TO THE BUILDING OFFICIAL, SHALL BE SUBMITTED.
25. THE CONTRACTOR SHALL MAKE PROVISIONS FOR DUST AND EROSION CONTROL 24 HOURS A DAY, 7 DAYS A WEEK UNTIL THE PROJECT IS FINAL.
27. THE FILLS SHALL BE COMPACTED TO 92% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM TEST METHOD D1557. THE TOP TWELVE INCHES OF PAVEMENT SUBGRADE SHOULD BE COMPACTED FURTHER TO 95% UNLESS NOTED OTHERWISE.
28. SITE ELECTRICAL, SITE UTILITIES, AND ALL REQUIRED RETAINING WALLS AND BLOCK WALLS ARE REQUIRED TO BE FINALED PRIOR TO AS-GRADE APPROVAL.
31. OVEREXCAVATE AND REMOVE ALL LOOSE SOILS, DEBRIS, AND ORGANIC MATTER TO ALLOW PROPER PREPARATION OF THE NATIVE GRADE BEFORE PLACEMENT OF ENGINEERED/COMPACTED FILL.
32. WHEN ADA SLOPES ARE DESIGNED TO THEIR MAXIMUM WITHOUT FIELD TOLERANCE, THE ENGINEER OF RECORD AND CITY INSPECTOR IS TO APPROVE FORM WORK PRIOR TO POURING THE CONCRETE.
33. THE CONTRACTOR SHALL MAKE PROVISIONS FOR DUST AND EROSION CONTROL 24 HOURS A DAY, 7 DAYS A WEEK, UNTIL THE PROJECT PERMIT IS FINALED.
34. ALL MATERIALS FOR THIS PROJECT, INCLUDING NATIVE SOIL AND FILLS (SEDIMENTS), ARE CONSIDERED POLLUTANTS. THE POLLUTANTS SHOULD NOT LEAVE THE SITE VIA DRAINAGE, WHEEL TRACKING, OR BY WIND. ALL MATERIALS ARE TO ENTER AND LEAVE THE SITE IN ADEQUATELY CONTAINED CONTAINERS.
35. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH THE CONSTRUCTION SITE'S POLLUTION, EROSION, AND SEDIMENT CONTROL PLAN. HE/SHE IS TO A HAVE A PLAN IN PLACE TO USE GOOD HOUSEKEEPING IN THE SITE'S MANAGEMENT OF USING BMPS, AS SET FORTH IN THE CBC CALGREEN CODE SECTION 5.106.

VICINITY MAP



NOTE:
THE OWNER AND CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND IMPLEMENT ALL BEST MANAGEMENT PRACTICES (BMPs), AS NECESSARY, IN ACCORDANCE WITH STATE WATER RESOURCES CONTROL BOARD REQUIREMENTS. MINIMUM BMPs SHALL INCLUDE SCHEDULING, PRESERVATION OF EXISTING VEGETATION, TEMPORARY SOIL STABILIZATION, PERIMETER SEDIMENT AND EROSION CONTROLS, AND ENTRANCE AND EXIT TRACKOUT PROTECTION. IN ADDITION, BMPs SHALL BE IMPLEMENTED TO PROVIDE PROTECTION AGAINST WIND EROSION, NON-STORM WATER POLLUTION, AND WASTE AND MATERIALS POLLUTION. ALL DISTURBED SOIL AREAS SHALL BE STABILIZED AT THE COMPLETION OF CONSTRUCTION.

BMPs SHALL INCLUDE, BUT NOT BE LIMITED TO, STABILIZED ENTRANCE/EXIT PER TC-1, FIBER ROLLS PER SC-5, DRAIN INLET PROTECTION PER SC-10, AND CONCRETE WASTE FACILITIES PER WM-8.

NOTE:
THESE IMPROVEMENT PLANS HAVE BEEN PREPARED WITH THE INTENT THAT BEDROCK ENGINEERING, INC. (BEDROCK) WILL BE PERFORMING THE CONSTRUCTION STAKING WORK FOR THE COMPLETE PROJECT. HOWEVER, IF ANOTHER ENGINEERING AND/OR LAND SURVEYING FIRM SHOULD BE EMPLOYED TO USE THESE PLANS FOR THE PURPOSE OF CONSTRUCTION STAKING, NOTICE IS HEREBY GIVEN THAT BEDROCK WILL NOT ASSUME ANY RESPONSIBILITY FOR ERRORS OR OMISSIONS, IF ANY, WHICH MIGHT OCCUR AND WHICH COULD HAVE BEEN AVOIDED, CORRECTED, OR MITIGATED IF BEDROCK HAD PERFORMED THE CONSTRUCTION STAKING WORK.

NOTE:
UNLESS NOTED OTHERWISE IN ARCHITECT'S PLANS, ALL CONCRETE PAVEMENT SUBJECT TO VEHICULAR TRAFFIC SHALL BE 6" PORTLAND CEMENT CONCRETE (3500 PSI) WITH #3 REBAR AT 24" O.C. OVER 12" COMPACTED NATIVE SOIL (95% RELATIVE COMPACTION).

NOTE:
PRIOR TO CONSTRUCTION, CONTRACTOR SHALL VERIFY LOCATION(S) AND SIZING OF ALL DOMESTIC, FIRE, AND LANDSCAPING WATER SERVICES; SANITARY SEWER SERVICES; WATER METERS; RP DEVICES; ETC. WITH BUILDING PLANS.

NOTE:
UNLESS NOTED OTHERWISE, ALL EXISTING BUILDINGS, FENCES, POWER POLES, UTILITY LINES, SIGNS, TREES, IRRIGATION RISERS, AND OTHER STRUCTURES WITHIN THE AREA OF CONSTRUCTION SHALL BE REMOVED, RELOCATED, ADJUSTED, OR ABANDONED IN ACCORDANCE WITH THIS PLAN AND CITY OF MERCED STANDARD SPECIFICATIONS.

NOTE:
PURSUANT TO SECTIONS 8771(B) AND 8771(C) OF THE GOVERNMENT CODE, ANY MONUMENTS THAT CONTROL THE LOCATION OF BOUNDARIES, OR OTHERWISE PROVIDE HORIZONTAL OR VERTICAL SURVEY CONTROL WITHIN THE CONSTRUCTION AREA, SHALL BE LOCATED AND REFERENCED PRIOR TO CONSTRUCTION, AND A CORNER RECORD OR RECORD OF SURVEY OF THE REFERENCES SHALL BE FILED WITH THE COUNTY SURVEYOR. PERMANENT MONUMENTATION SHALL BE SET TO PERPETUATE THE LOCATION OF ANY MONUMENT WHICH COULD BE DAMAGED OR DESTROYED. AND A CORNER RECORD OR RECORD OF SURVEY SHALL BE FILED WITH THE COUNTY SURVEYOR PRIOR TO THE RECORDING OF A CERTIFICATE OF COMPLETION FOR THE PROJECT.

NOTE:
ANY PERSON, CONTRACTOR OR SUBCONTRACTOR PLANNING ANY EXCAVATION SHALL CONTACT USA NORTH AT 811 AT LEAST TWO WORKING DAYS, BUT NO MORE THAN 14 CALENDAR DAYS, PRIOR TO COMMENCING THAT EXCAVATION.

NOTE:
FOR SLOPES ADJACENT TO ACCESSIBLE PATHS OF TRAVEL, SLOPE FROM FINISHED PATH AT 2% MINIMUM, 8% MAXIMUM FOR 4' HORIZONTAL, THEN AT 2:1 MAXIMUM TO MATCH EXISTING/PROPOSED GROUND.

OR ALTERNATELY, CONSTRUCT 6" HIGH WARNING CURB AT EDGE OF SIDEWALK AND THEN SLOPE AT 2:1 MAXIMUM TO MATCH EXISTING/PROPOSED GROUND. WHERE SIDEWALK SLOPES DOWN TO WARNING CURB, PROVIDE 6" WIDE OPENINGS AT 4' O.C. TO ALLOW FOR RUNOFF TO DRAIN TO ADJACENT LANDSCAPE AREA.

OR ALTERNATELY, CONSTRUCT HANDRAIL WITH GUIDE RAIL AT EDGE OF SIDEWALK PER SITE, BUILDING, AND LANDSCAPING PLANS.

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SCALE: 1"=20'
0 5 10 20 40

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DAVID D. HARTLEY
No. 57321
Exp. 12-31-27
CIVIL
STATE OF CALIFORNIA
3/3/26

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK – PHASE I

SHEET TITLE

CIVIL PLAN COVER SHEET

DATES

NO.	DESCRIPTION	DATE
1.	60% CDs	11/13/25
2.	90% CDs	2/16/26
3.	100% CDs	3/3/26
4.	--	--
5.	--	--
6.	--	--
7.	--	--
8.	--	--

PLOT DATE: --

PROJECT NUMBERS

MELTON DESIGN GROUP: XXXX
CONSULTANT PROJECT #: 24-8149

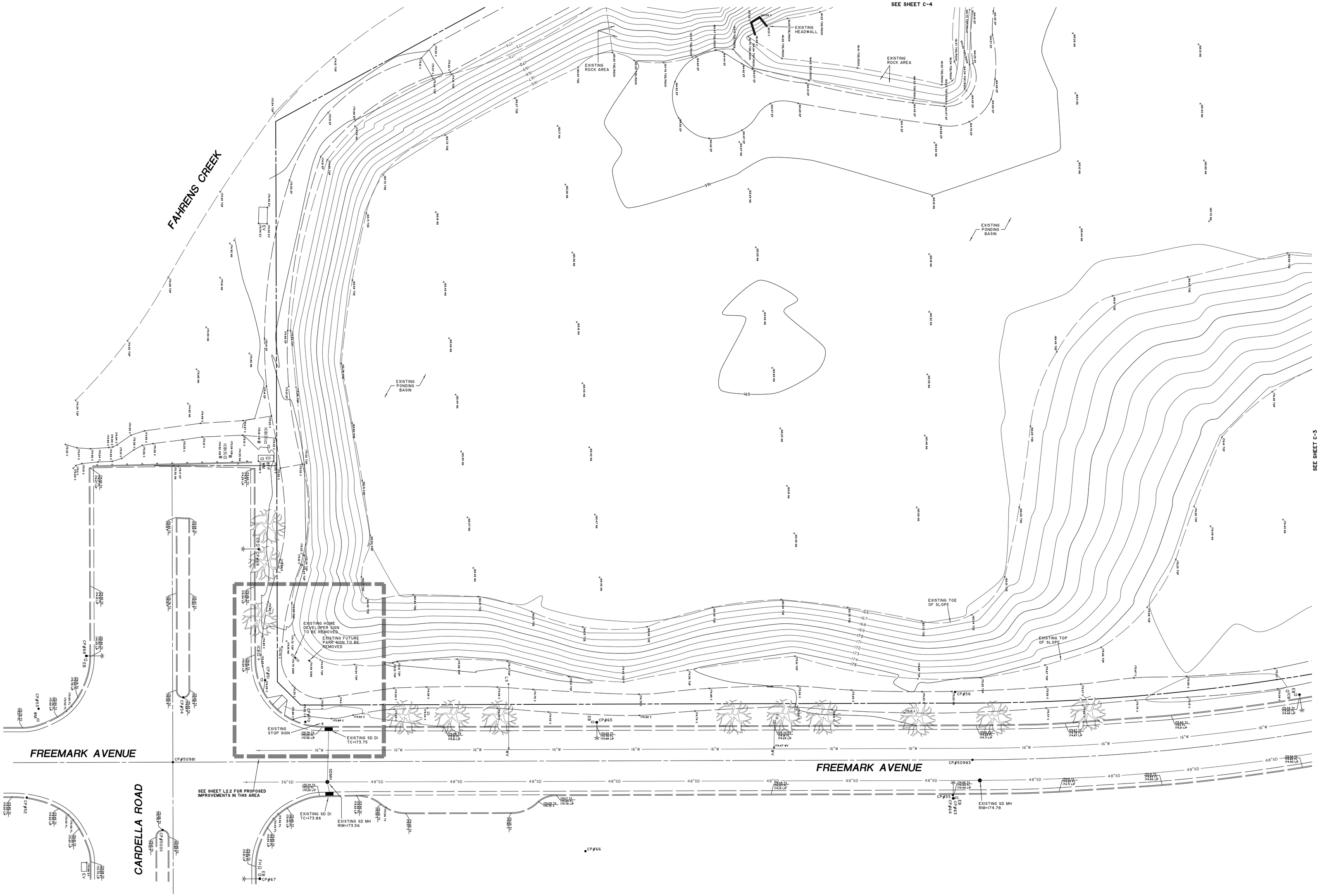
SHEET NUMBER

C-1

SHEET _1_ OF _7_

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GENERAL VANG PAO MEMORIAL PARK – PHASE I

SHEET TITLE

TOPO SURVEY – SOUTH PORTION

DATES

NO.	DESCRIPTION	DATE
1.	60% CDs	11/13/25
2.	90% CDs	2/16/26
3.	100% CDs	3/3/26
4.	--	--
5.	--	--
6.	--	--
7.	--	--
8.	--	--

PLOT DATE: --

PROJECT NUMBERS

MELTON DESIGN GROUP: XXXX
CONSULTANT PROJECT #: 24-8149

SHEET NUMBER

C-2

SHEET 2 OF 7

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SHEET TITLE

TOPO SURVEY – NORTH PORTION

DATES

NO.	DESCRIPTION	DATE
1.	60% CDs	11/13/25
2.	90% CDs	2/16/26
3.	100% CDs	3/3/26
4.	--	--
5.	--	--
6.	--	--
7.	--	--
8.	--	--

PLOT DATE: --

PROJECT NUMBERS

MELTON DESIGN GROUP: XXXX
CONSULTANT PROJECT #: 24-8149

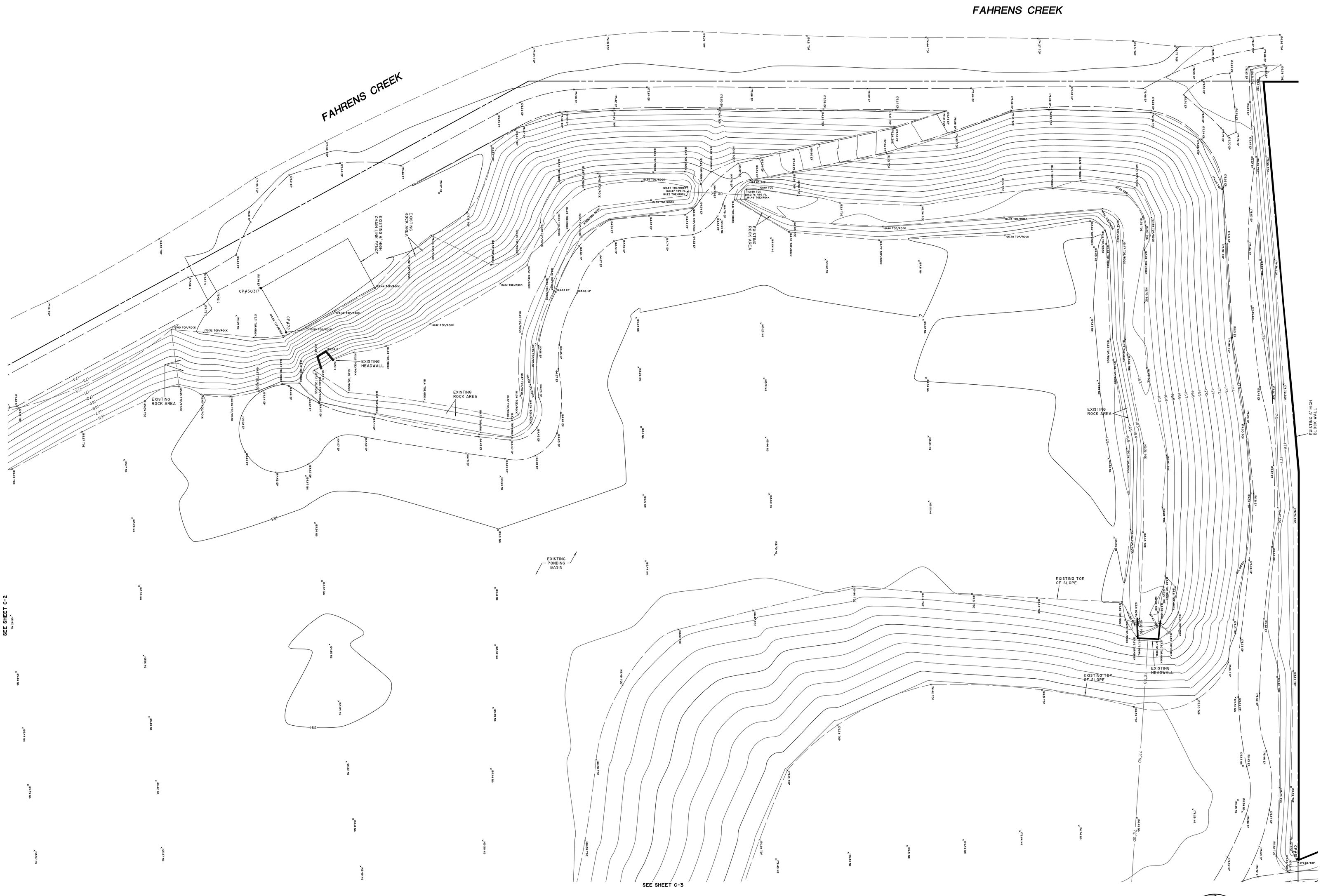
SHEET NUMBER

C-3

SHEET 3 OF 7

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GENERAL VANG PAO MEMORIAL PARK – PHASE I

SHEET TITLE

TOPO SURVEY – WEST PORTION

DATES

NO.	DESCRIPTION	DATE
1.	60% CDs	11/13/25
2.	90% CDs	2/16/26
3.	100% CDs	3/3/26
4.	--	--
5.	--	--
6.	--	--
7.	--	--
8.	--	--

PLOT DATE: --

PROJECT NUMBERS

MELTON DESIGN GROUP: XXXX
CONSULTANT PROJECT #: 24-8149

SHEET NUMBER

C-4

SHEET 4 OF 7

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ADDITIONAL NOTES

(SC) SAWCUT AND REMOVE 2' WIDTH OF EXISTING PAVEMENT (OR TO LIMITS OF DAMAGE) TO ENSURE A CLEAN TRANSITION FROM EXISTING TO NEW PAVEMENT

(MA) MATCH EXISTING CONCRETE SIDEWALK, CONCRETE DRIVE APPROACH, OR DIRT GRADE

(RA) PROPOSED ONSITE ADA-COMPLIANT ACCESS RAMP PER SITE AND BUILDING PLANS

(SM) SLOPE FROM FINISHED PATH AT 2% MIN., 8% MAX. FOR 4' HORIZONTAL, THEN AT 2% MIN., 3:1 PREFERRED MAX., 2:1 ABSOLUTE MAX. TO MATCH EXISTING/PROPOSED GROUND

(SW) PROPOSED 2' WIDE (MINIMUM) BY 6" DEEP (MINIMUM) ROCK-LINED DRAINAGE SWALE (2% MIN. SLOPE WITHIN 10' FROM BUILDING; 1.0% MIN. SLOPE ELSEWHERE)

(FE) PROPOSED CHAIN LINK OR WROUGHT IRON FENCE PER SITE AND BUILDING PLANS (BY OTHERS)

(RR) PROVIDE BACKING NO. 3 ROCK SLOPE PROTECTION PER CALTRANS RSP MANUAL (OR APPROVED EQUAL) FOR EROSION CONTROL

PROPOSED UTILITY DATA

ALL ONSITE DRAIN INLETS SHALL BE 12" ROUND DRAIN BASINS WITH 12" SQUARE OR DOME GRATES (ADS "NYLOPLAST" OR APPR'D EQUAL) AND SHALL BE INSTALLED PER MANUFACTURER'S SPECS.; ALL STORM DRAIN LINES SHALL BE HDPE DRAIN LINE (ADS N-12 DUAL WALL OR APPR'D EQUAL), INSTALLED PER MANUFACTURER'S SPECS.; SEE CATCH BASIN DETAILS ON SHEET C-7 AND DETAIL 2 ON SHEET L2.3

(D1) GRATE=175.50; FL 12" W=171.50
32± L.F.; SLOPE=0.0100

(D2) TS=176.20; GRATE=175.20; FL 12" E,NW=171.18
61± L.F.; SLOPE=0.0100

(D3) TS=175.90; GRATE=174.90; FL 12" SE,NW,NE=170.57
145± L.F.; SLOPE=0.0500
FL 12" SE=163.30(AT OUTFALL)

(D4) GRATE=171.55; FL 6" SW=170.55
26± L.F.; SLOPE=0.0200±

(D5) FL 6" SE=172.78; FL 6" NW=172.66
8± L.F.; SLOPE=0.0150±

** NOTE:
IN MULCH AND PIP PLAY AREAS, GRATE ELEVATIONS SHOWN ARE INTENDED TO MATCH THE TOP OF THE SURROUNDING PROPOSED SURFACING. PRIOR TO CONSTRUCTION CONTRACTOR SHALL VERIFY TOP OF GRATE ELEVATIONS WITH SITE, BUILDING, AND LANDSCAPE PLANS TO CONFIRM WHETHER GRATES ARE TO BE CONSTRUCTED FLUSH WITH TOP OF SURFACING OR FLUSH WITH SUBGRADE. PROVIDE FILTER FABRIC ON ALL GRATES.

(D10) CONSTRUCT CONCRETE CATCH BASIN WITH HEAVY DUTY TRAFFIC-RATED GRATE (DURADRAIN F24 OR APPR'D EQUAL); INSTALL 97± L.F. OF 12" HDPE SD LINE; SLOPE=0.0020; PROTECT EXISTING 72" SD LINE AND DO NOT CONNECT;
RIM=175.00
FL 12" SW=170.76
(ADD ALTERNATE) IN LIEU OF CONCRETE CATCH BASIN, CONSTRUCT SD MANHOLE PER CITY STD. DWG. SD-11 OVER AND CONNECT TO EXISTING 72" STORM DRAIN LINE

(S1) TIE INTO EXISTING SANITARY SEWER SERVICE LINE PER CITY OF MERCED STANDARDS AND PIPE MANUFACTURER'S RECOMMENDATIONS; FL 4" NE,SW=170.00±(MEET);
INSTALL 57.5± L.F. OF 4" PVC SEWER LINE (SDR-26);
SLOPE=0.0200(MIN.)

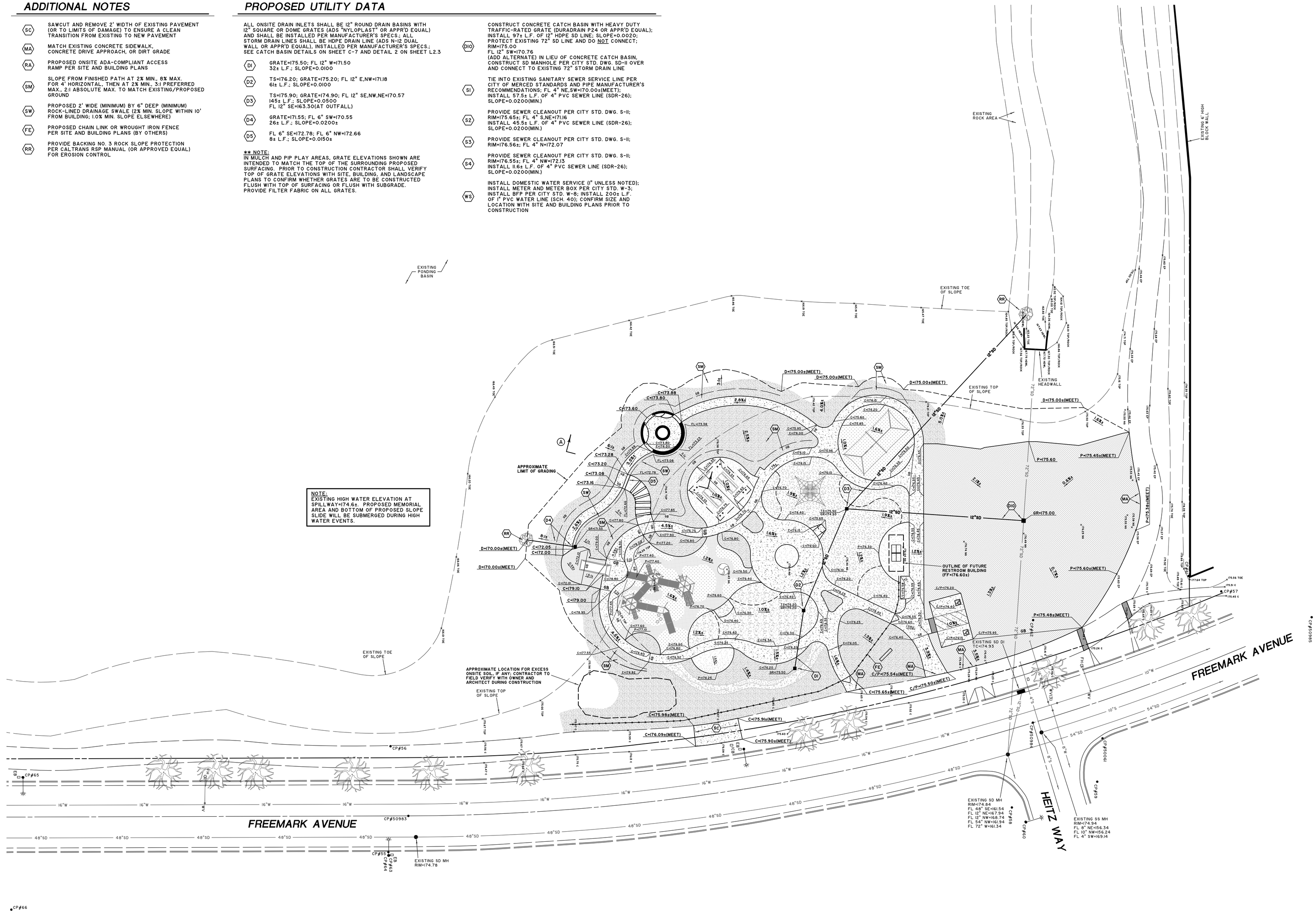
(S2) PROVIDE SEWER CLEANOUT PER CITY STD. DWG. S-11; RIM=175.65±; FL 4" S,NE=171.16
INSTALL 45.5± L.F. OF 4" PVC SEWER LINE (SDR-26);
SLOPE=0.0200(MIN.)

(S3) PROVIDE SEWER CLEANOUT PER CITY STD. DWG. S-11; RIM=176.56±; FL 4" N=172.07

(S4) PROVIDE SEWER CLEANOUT PER CITY STD. DWG. S-11; RIM=176.55±; FL 4" NW=172.13
INSTALL 11.6± L.F. OF 4" PVC SEWER LINE (SDR-26);
SLOPE=0.0200(MIN.)

(WS) INSTALL DOMESTIC WATER SERVICE (1" UNLESS NOTED); INSTALL METER AND METER BOX PER CITY STD. W-3; INSTALL BFP PER CITY STD. W-8; INSTALL 200± L.F. OF 1" PVC WATER LINE (SCH. 40); CONFIRM SIZE AND LOCATION WITH SITE AND BUILDING PLANS PRIOR TO CONSTRUCTION

NOTE:
EXISTING HIGH WATER ELEVATION AT SPILLWAY=174.6±. PROPOSED MEMORIAL AREA AND BOTTOM OF PROPOSED SLOPE SLIDE WILL BE SUBMERGED DURING HIGH WATER EVENTS.



SCALE: 1"=20'

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STATE OF CALIFORNIA
3/3/26

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CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK – PHASE I

SHEET TITLE

GRADING AND DRAINAGE PLAN

DATES

NO.	DESCRIPTION	DATE
1.	60% CDs	11/13/25
2.	90% CDs	2/16/26
3.	100% CDs	3/3/26
4.	--	--
5.	--	--
6.	--	--
7.	--	--
8.	--	--

PLOT DATE: --

PROJECT NUMBERS

MELTON DESIGN GROUP: XXXX
CONSULTANT PROJECT #: 24-8149

SHEET NUMBER

C-5

SHEET 5 OF 7

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Page 34 of 42

ADDITIONAL NOTES

- SC — SAWCUT AND REMOVE 2' WIDTH OF EXISTING PAVEMENT (OR TO LIMITS OF DAMAGE) TO ENSURE A CLEAN TRANSITION FROM EXISTING TO NEW PAVEMENT
- MA — MATCH EXISTING CONCRETE SIDEWALK, CONCRETE DRIVE APPROACH, OR DIRT GRADE
- RA — PROPOSED ONSITE ADA-COMPLIANT ACCESS RAMP PER SITE AND BUILDING PLANS
- SM — SLOPE FROM FINISHED PATH AT 2% MIN., 8% MAX. FOR 4' HORIZONTAL, THEN AT 2% MIN., 3:1 PREFERRED MAX., 2:1 ABSOLUTE MAX. TO MATCH EXISTING/PROPOSED GROUND
- SW — PROPOSED 2' WIDE (MINIMUM) BY 6" DEEP (MINIMUM) ROCK-LINED DRAINAGE SWALE (2% MIN. SLOPE WITHIN 10' FROM BUILDING; 1.0% MIN. SLOPE ELSEWHERE)
- FE — PROPOSED CHAIN LINK OR WROUGHT IRON FENCE PER SITE AND BUILDING PLANS (BY OTHERS)
- RR — PROVIDE BACKING NO. 3 ROCK SLOPE PROTECTION PER CALTRANS RSP MANUAL (OR APPROVED EQUAL) FOR EROSION CONTROL

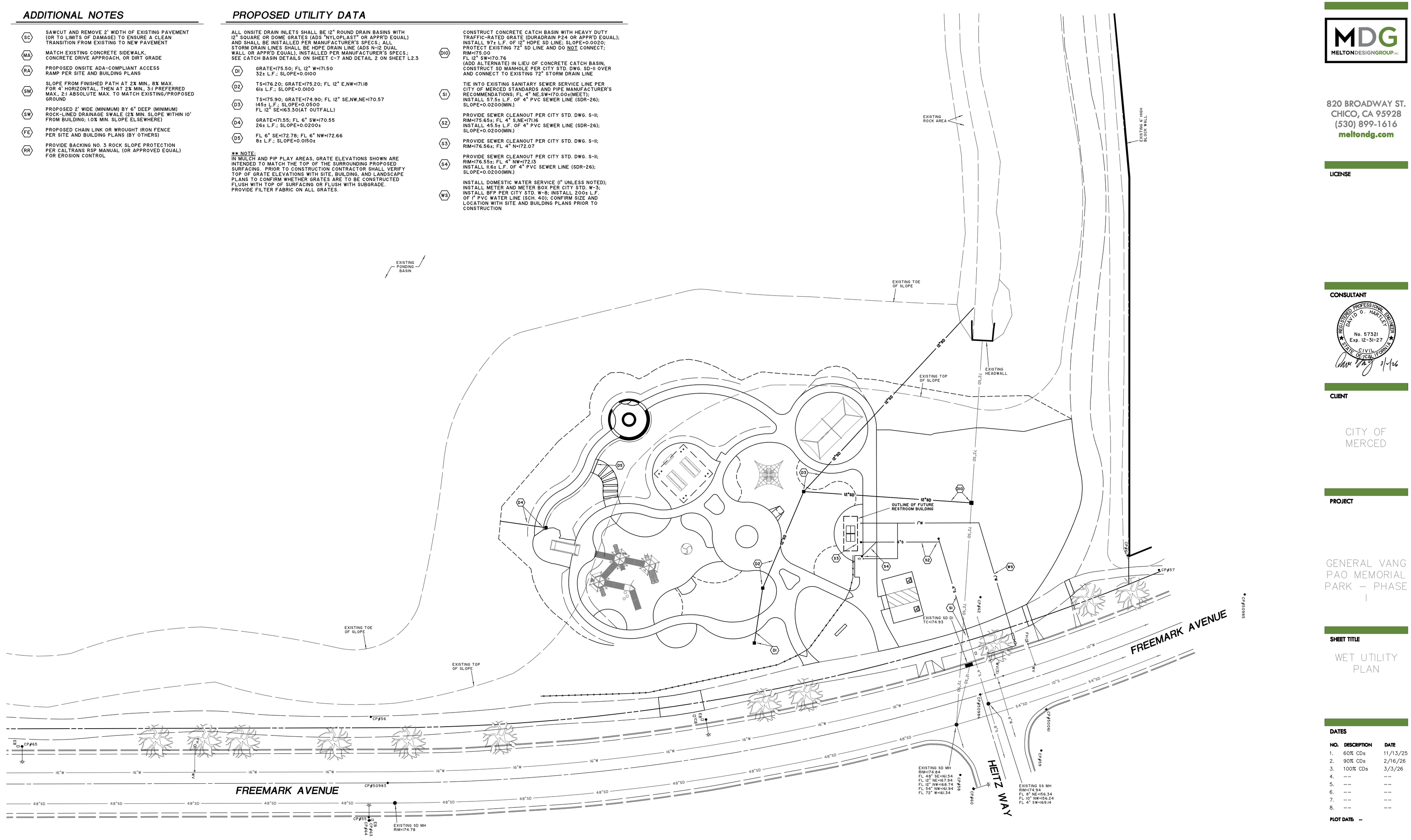
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- D1 — GRATE=175.50; FL 12" W=171.50; 32± L.F.; SLOPE=0.0100
- D2 — TS=176.20; GRATE=175.20; FL 12" E,NW=171.18; 61± L.F.; SLOPE=0.0100
- D3 — TS=175.90; GRATE=174.90; FL 12" SE,NW,NE=170.57; 145± L.F.; SLOPE=0.0500; FL 12" SE=163.30(AT OUTFALL)
- D4 — GRATE=171.55; FL 6" SW=170.55; 26± L.F.; SLOPE=0.0200±
- D5 — FL 6" SE=172.78; FL 6" NW=172.66; 8± L.F.; SLOPE=0.0150±

** NOTE:
IN MULCH AND PIP PLAY AREAS, GRATE ELEVATIONS SHOWN ARE INTENDED TO MATCH THE TOP OF THE SURROUNDING PROPOSED SURFACING. PRIOR TO CONSTRUCTION CONTRACTOR SHALL VERIFY TOP OF GRATE ELEVATIONS WITH SITE, BUILDING, AND LANDSCAPE PLANS TO CONFIRM WHETHER GRATES ARE TO BE CONSTRUCTED FLUSH WITH TOP OF SURFACING OR FLUSH WITH SUBGRADE. PROVIDE FILTER FABRIC ON ALL GRATES.

- D10 — CONSTRUCT CONCRETE CATCH BASIN WITH HEAVY DUTY TRAFFIC-RATED GRATE (DURADRAIN P24 OR APPR'D EQUAL); INSTALL 97± L.F. OF 12" HDPE SD LINE; SLOPE=0.0020; PROTECT EXISTING 72" SD LINE AND DO NOT CONNECT; RIM=175.00; FL 12" SW=170.76; (ADD ALTERNATE) IN LIEU OF CONCRETE CATCH BASIN, CONSTRUCT SD MANHOLE PER CITY STD. DWG. SD-11 OVER AND CONNECT TO EXISTING 72" STORM DRAIN LINE
- S1 — TIE INTO EXISTING SANITARY SEWER SERVICE LINE PER CITY OF MERCED STANDARDS AND PIPE MANUFACTURER'S RECOMMENDATIONS; FL 4" NE,SW=170.00±(MEET); INSTALL 57.5± L.F. OF 4" PVC SEWER LINE (SDR-26); SLOPE=0.0200(MIN.)
- S2 — PROVIDE SEWER CLEANOUT PER CITY STD. DWG. S-11; RIM=175.65±; FL 4" S,NE=171.16; INSTALL 45.5± L.F. OF 4" PVC SEWER LINE (SDR-26); SLOPE=0.0200(MIN.)
- S3 — PROVIDE SEWER CLEANOUT PER CITY STD. DWG. S-11; RIM=176.56±; FL 4" N=172.07
- S4 — PROVIDE SEWER CLEANOUT PER CITY STD. DWG. S-11; RIM=176.55±; FL 4" NW=172.15; INSTALL 11.6± L.F. OF 4" PVC SEWER LINE (SDR-26); SLOPE=0.0200(MIN.)
- W5 — INSTALL DOMESTIC WATER SERVICE (1" UNLESS NOTED); INSTALL METER AND METER BOX PER CITY STD. W-3; INSTALL BFP PER CITY STD. W-8; INSTALL 200± L.F. OF 1" PVC WATER LINE (SCH. 40); CONFIRM SIZE AND LOCATION WITH SITE AND BUILDING PLANS PRIOR TO CONSTRUCTION



SCALE: 1"=20'

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No. 57321
Exp. 12-31-27
CIVIL
STATE OF CALIFORNIA
3/3/26

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK – PHASE I

SHEET TITLE

WET UTILITY PLAN

DATES

NO.	DESCRIPTION	DATE
1.	60% CDs	11/13/25
2.	90% CDs	2/16/26
3.	100% CDs	3/3/26
4.	--	--
5.	--	--
6.	--	--
7.	--	--
8.	--	--

PLOT DATE: --

PROJECT NUMBERS

MELTON DESIGN GROUP: XXXX
CONSULTANT PROJECT #: 24-8149

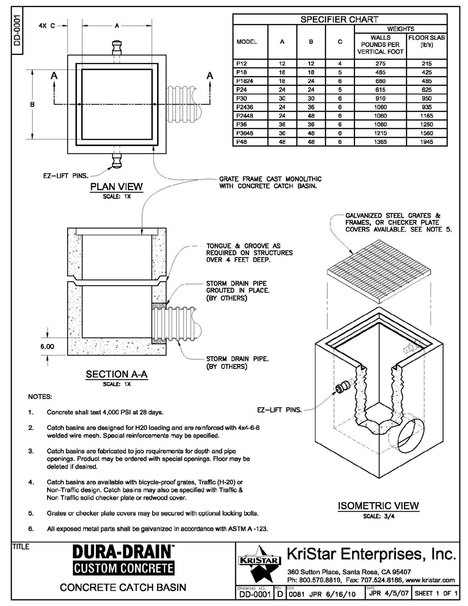
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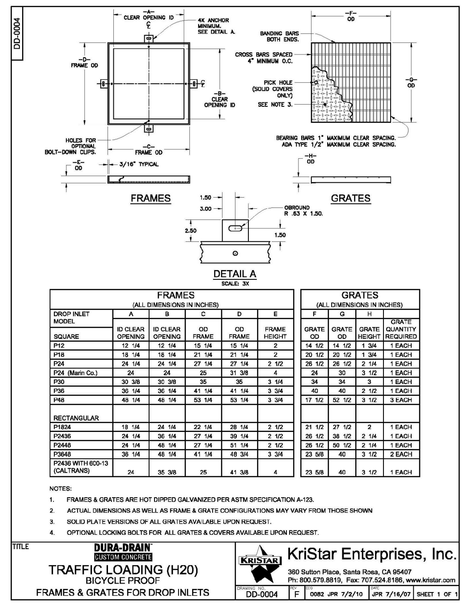
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SHEET 6 OF 7

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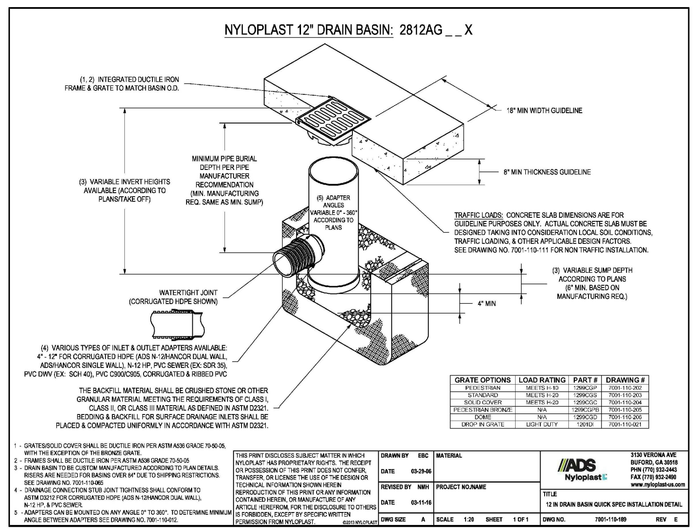
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CONCRETE CATCH BASIN INLET/OUTLET

NO SCALE



STORM DRAIN CATCH BASIN INLET/OUTLET

NO SCALE

Section 2721

Engineered Surface Drainage Products

GENERAL

PVC surface drainage inlets shall include the drain basin type as indicated on the contract drawing and referenced within the contract specifications. The ductile iron grates for each of these fittings are to be considered an integral part of the surface drainage inlet and shall be furnished by the same manufacturer. The surface drainage inlets shall be as manufactured by Nyloplast a division of Advanced Drainage Systems, Inc. or prior approved equal

MATERIALS

The drain basins required for this contract shall be manufactured from PVC pipe stock, utilizing a thermoforming process to reform the pipe stock to the specified configuration. The drainage pipe connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection with the specified pipe system. This joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals. The flexible elastomeric seals shall conform to ASTM F477. This p pu bolt spigot shall be period to the main body of the drain basin or catch basin. The raw material used to manufacture the pipe stock that is used to manufacture the main body and pipe stubs of the surface drainage inlets shall conform to ASTV D1784 cell class 12454.

The grates and frames furnished for all surface drainage inlets shall be ductile iron for structure sizes 8", 10", 12", 15", 18", 24", 30" and 36" and shall be made specifically for each basin so as to provide a round bottom flange that closely matches the diameter of the surface drainage inlet. Grates for drain basins shall be capable of supporting various wheel loads as specified by Nyloplast: 12" and 15" square grates will be hinged to the frame using pins. Ductile iron used in the manufacture of the castings shall conform to ASTM A536 grade 70-50-05. Grates and covers shall be provided painted black.

INSTALLATION

The specified PVC surface drainage inlet shall be installed using conventional flexible pipe backfill materials and procedures. The backfill material shall be crushed stone or other granular material meeting the requirements of class 1, class 2, or c ass 3 material as defined in ASTM D2321. Bedding and backfill for surface drainage inlets shall be well placed and compacted uniformly in accordance with ASTM D2321. The crushin basin body will be cut at the time of the final grade. No brick, stone or concrete block will be required to set the grate to the final grade height. For load rated installations, a concrete slab shall be poured under and around the grate and frame. The concrete slab must be designed taking into consideration local soil conditions, traffic loading, and other applicable design factors. For other installation considerations such as migration of fines, ground water, and soft foundations refer to ASTM D2321 guidelines.

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DRAWN BY: CJA
DATE: 3-15-06
REVISED BY: MBH
DATE: 03-31-10
PROJECT NO./NAME:
MATERIAL:
TITLE: 8 IN - 36 IN DRAIN BASIN SPECIFICATIONS
DWG NO.: 7001-110-001
REV: J
SIZE: A
SCALE: 1:1
SHEET: 1 OF 1

SS CLEANOUT

NO SCALE

A SLOPE SECTION

NO SCALE

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3/3/26

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CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK – PHASE I

SHEET TITLE

CIVIL DETAILS

DATES

NO.	DESCRIPTION	DATE
1.	60% CDs	11/13/25
2.	90% CDs	2/16/26
3.	100% CDs	3/3/26
4.	--	--
5.	--	--
6.	--	--
7.	--	--
8.	--	--

PLOT DATE --

PROJECT NUMBERS

MELTON DESIGN GROUP: XXXX
CONSULTANT PROJECT #: 24-8149

SHEET NUMBER

C-7

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EXISTING CONDITIONS NOTE

1. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND RETAIN EXISTING HARDSCAPE, ASPHALT PATHS, LANDSCAPING, IRRIGATION, ETC. THAT ARE NOT DESIGNATED FOR DEMOLITION OR MODIFICATION.
2. CONTRACTOR SHALL COVER EXISTING ASPHALT PATHS, ROADWAYS, CURBS, MOW CURBS AND OTHER ELEMENTS TO PROTECT FROM DAMAGE DURING CONSTRUCTION.
3. CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR AND/OR REPLACE ALL DAMAGED SURFACES, PARKING LOT, AMENITIES, HARDSCAPES, CURB, RESTROOM, LANDSCAPE, IRRIGATION, ETC. DUE TO HIS/HER ACTIVITY OR NEGLECT AND AS APPROVED BY THE DISTRICT.
4. PRIOR TO FINAL APPROVAL, CONTRACTOR SHALL HAVE ALL CONCRETE CLEAN AND STAIN FREE.

PLAY EQUIPMENT NOTES

1. CONTACT PLAY EQUIPMENT MANUFACTURER FOR COLORS NOT NOTED ON PLANS, DETAILS, OR SCHEDULES.
2. INSTALL PER MANUFACTURER'S RECOMMENDATION .

CONSTRUCTION NOTES

1. CONFIRM ALL LOCATIONS OF EXISTING UTILITIES WITHIN PROJECT SITE PRIOR TO DEMOLITION AND EXCAVATION. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND RETAIN EXISTING UTILITIES, AND FOR THE REPAIR AND/OR REPLACEMENT OF UTILITIES DAMAGED DUE TO CONTRACTORS WORK OR NEGLECT.
2. THE LANDSCAPE ARCHITECT CANNOT BE RESPONSIBLE FOR THE COMPLETENESS OR ACCURACY OF EXISTING INFORMATION. PROVISION OF UTILITY LOCATION DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR RESPONSIBILITY TO CONDUCT FIELD DISCOVERY TO VERIFY EXISTING CONDITIONS.
3. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE HIS WORK WITH THE WORK OF OTHERS.
4. CONSTRUCTION SHALL CONFORM TO ALL UNIFORM BUILDING CODES AND SPECIFICATIONS.
5. CONTRACTOR SHALL OBSERVE ALL SAFETY REGULATIONS PERTAINING TO THIS PROJECT.
6. ANY CHANGES SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.

NORTH

0 30 60

SCALE: 1" = 30'
@30x42

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PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

CONSTRUCTION PLAN - OVERALL

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
4.		
5.		
6.		
7.		
8.		

PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

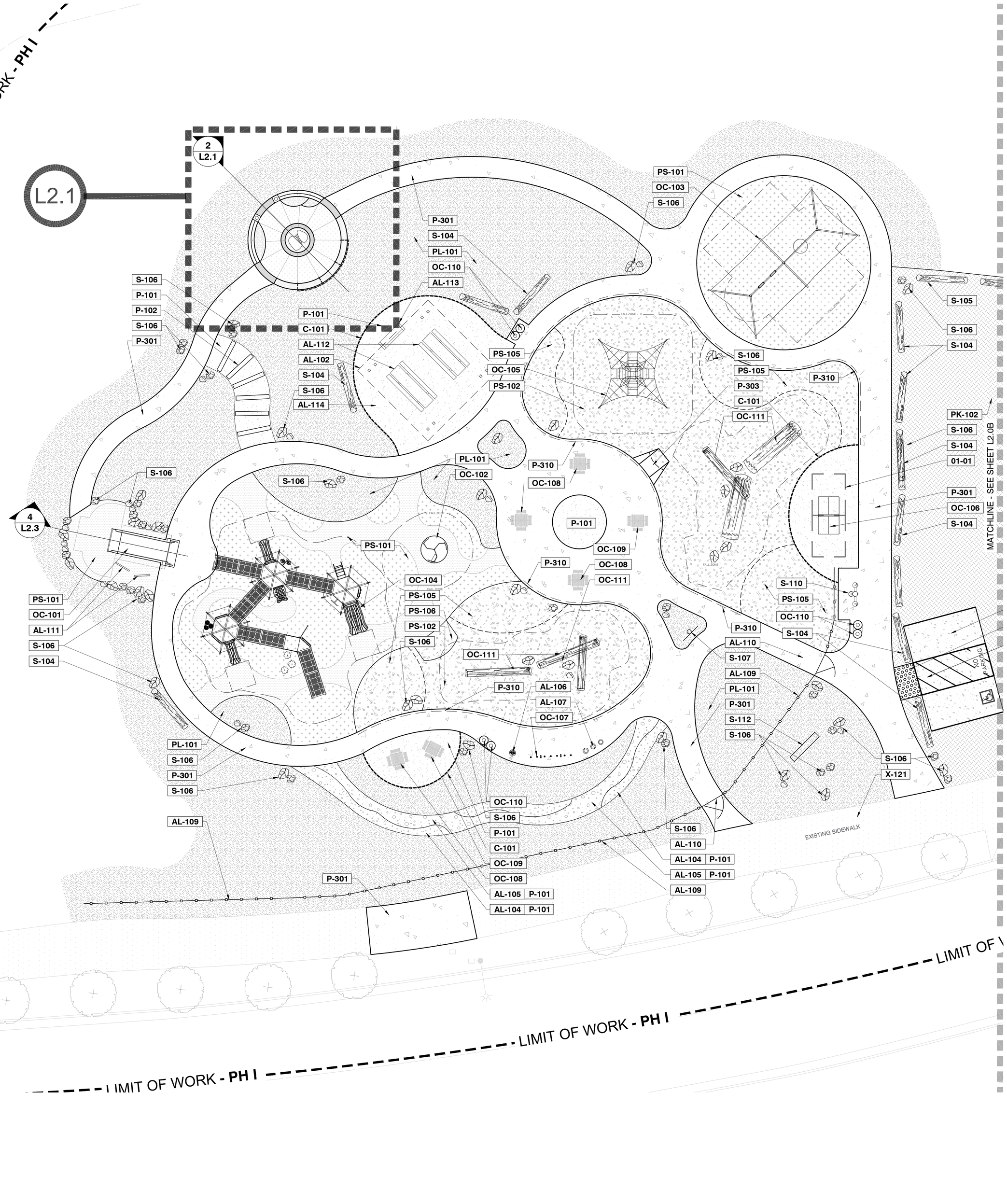
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Page 37 of 412



REFERENCE NOTES SCHEDULE AREA A

CODE	DESCRIPTION	DETAIL
01 GENERAL		
01-01	FUTURE RESTROOM	
ALTERNATES		
AL-102	STEEL SHADE STRUCTURE, ICON - 24'X24'	1/L2.8
AL-104	REFLEXOLOGY PATH (90'L X 5'W TOTAL), SMALL STONES	2/L2.7
AL-105	REFLEXOLOGY PATH (90'L X 5'W TOTAL), LARGE STONES	2/L2.7
AL-106	CALYPSO DRUM, FREENOTES HARMONY PARK (SURFACE MOUNTED). MODEL #: CPSO-S-SM.	3/L2.6
AL-107	BOSSA NOVA DRUMS, FREENOTES HARMONY PARK (SURFACE MOUNTED). MODEL #: DRUM-SET-MOSS-SM.	2/L2.6
AL-109	STEEL PICKET FENCE - 4' TALL	8/L2.4
AL-110	STEEL PICKET GATE - 4' TALL X 5' WIDE	8/L2.4
AL-111	WAVY RAIL ON SLOPE (CUSTOM)	13/L2.6
AL-112	LIVE EDGE CUSTOM WOOD PICNIC TABLE, 12'. LOCALLY BUILT, AVAILABLE FROM OLD LAKE MILL & LUMBER	3/L2.7
AL-113	LIVE EDGE CUSTOM WOOD BENCH, 7', LOCALLY BUILT, AVAILABLE FROM OLD LAKE MILL & LUMBER	4/L2.7
AL-114	ARTISAN FLAGSTONE PAVERS, BASALITE, POSITANO	9/L2.4
CURB		
C-101	STEEL EDGING AT DECOMPOSED GRANITE	1/L2.3
PURCHASED BY OWNER - INSTALLED BY CONTRACTOR		
OC-101	EMBANKMENT SLIDE, 8' TRIPLE WIDE, UPC. PREPURCHASED BY CITY, INSTALLED BY CONTRACTOR	1/L2.5
OC-102	ACCESSIBLE TWIRL A WHIRL SPINNER, WISDOM PLAYGROUNDS. PREPURCHASED BY CITY, INSTALLED BY CONTRACTOR	6/L2.5
OC-103	CUSTOM SINGLE-POST SWINGS, 2-BAYS WITH SHADE W/ (2) BELT SEATS & (1) SAUCER SEAT, WISDOM PLAYGROUNDS, #SPS-0801-1D-SF-123-1. PREPURCHASED BY CITY, INSTALLED BY CONTRACTOR	3/L2.5
OC-104	HMONG CUSTOM PLAYGROUND STRUCTURE, WISDOM PLAYGROUNDS, #WP3525-651BC33-77122123-C-1. PREPURCHASED BY CITY, INSTALLED BY CONTRACTOR	8/L2.5
OC-105	THE RAMESSES NET CLIMBER, WISDOM PLAYGROUNDS, #74-21033. PREPURCHASED BY CITY, INSTALLED BY CONTRACTOR	2/L2.5
OC-106	CONCRETE PING PONG TABLE, UPC #UP14000. PREPURCHASED BY CITY, INSTALLED BY CONTRACTOR	9/L2.5
OC-107	CONTRABASS CHIMES, FREENOTES HARMONY PARK (SURFACE MOUNTED). MODEL #: CCH-SM. PREPURCHASED BY CITY, INSTALLED BY CONTRACTOR	1/L2.6
OC-108	PICNIC TABLE, 46" KENSINGTON SQUARE (SURFACE MOUNT) ULTRA BLUE, #40SM-S. PREPURCHASED BY CITY, INSTALLED BY CONTRACTOR	5/L2.6
OC-109	PICNIC TABLE, 46" KENSINGTON SQUARE, ACCESSIBLE 3-SEAT (SURFACE MOUNT) ULTRA BLUE, #40SMH3-S. PREPURCHASED BY CITY, INSTALLED BY CONTRACTOR	4/L2.6
OC-110	TRASH AND RECYCLE RECEPTACLES, 36 GALLON, LEXINGTON BY ULTRASITE, ULTRA BLUE #LX-72RB. PREPURCHASED BY CITY, INSTALLED BY CONTRACTOR	6/L2.6
OC-111	CLIMBING LOGS: (4) 16'X20" AND (2) 16'X48", OLD LAKE MILL & LUMBER. DESIGN TO BE CONFIRMED IN-FIELD. BY LANDSCAPE ARCHITECT. PURCHASED BY OWNER, INSTALLED BY CONTRACTOR.	1/L2.4
PAVING/SURFACING		
P-101	DECOMPOSED GRANITE SURFACING, 3" DEEP AFTER COMPACTION	1/L2.3
P-102	LANDSCAPE TIE TIMBERS, INFORMAL PATH AND STAIRS	2/L2.4
CONCRETE PAVING		
P-301	STANDARD GREY CONCRETE 4" DEEP, MEDIUM BROOM FINISH. SCORELINES AND EXPANSION JOINTS PLACED PER DETAIL AND SPECIFICATIONS	6/L2.3
P-303	PLAY AREA ACCESS RAMP - CONCRETE	9/L2.6
P-310	THICKENED EDGE OF CONCRETE AT ENGINEERED WOOD FIBER AREAS SHOWN PER PLAN	8/L2.6
PARKING SCHEDULE		
PK-101	ADA PARKING SIGNAGE AND STRIPING	3/L2.3
PK-102	GRAVEL PARKING LOT 6" DEPTH - 3/4" CRUSHED ANGULAR ROCK. COMPACT TO 95%	6/L2.4
PK-103	CONCRETE ACCESSIBLE PARKING STALLS AND ACCESSIBLE AISLE, 6" THICK WITH 6" CLASS 2 AGGREGATE BASE AND REBAR PER DETAIL. SIGNAGE AND STRIPING PER PLAN	4/L2.3
PK-104	TRUNCATED DOME PAD, 8 FT X 3 FT, BOLT-ON OVER STANDARD 4" CONCRETE	4/L2.3
PLANTING		
PL-101	BARK MULCH LANDSCAPE AREA, 3" DEEP, NON-COMPACT PER SPECIFICATIONS	
PLAY/ATHLETIC PROTECTIVE SURFACING		
PS-101	POUR-IN-PLACE RUBBER SURFACING FALL MATERIAL - FLEXGROUND. FALL HEIGHT PER MANUFACTURER SPECIFICATION. SEE LEGEND FOR COLOR MIX.	11/L2.6
PS-102	ENGINEERED WOOD FIBER (EWF) FALL MATERIAL, 12" DEEP.	7/L2.6
PS-105	ENGINEERED WOOD FIBER FALL MATERIAL, 3" THICK, IN PLANTER AREA	7/L2.6
PS-106	PLAY AREA ACCESS RAMP - POUR-IN-PLACE RUBBER	10/L2.6
SITE FURNISHINGS		
S-104	EMBEDDED LOG, SIZE VARIES, PINNED WITH 1" X 4'-0" GALVANIZED PIPES	3/L2.4
S-105	EMBEDDED LOG, SIZE VARIES, PINNED WITH 1" X 6'-0" GALVANIZED PIPES (ON WEST SIDE OF PARKING LOT)	3/L2.4
S-106	EMBEDDED BOULDER, SIZE VARIES. SEE SCHEDULE FOR SIZING	4/L2.4, 5/L2.4
S-107	FIRST 5 CALIFORNIA SIGN	5/L2.3
S-110	PEDESTAL MOUNTED BOTTLE FILLER AND BI-LEVEL DRINKING FOUNTAIN WITH PET FOUNTAIN (MOST DEPENDABLE FOUNTAINS, MODEL #10145) COLOR: BLACK	7/L2.4
S-112	STEEL MONUMENT SIGN - ALETHA JUNE PLAYGROUND MEMORIAL	2/L2.2
EXISTING CONDITIONS		
X-121	RETAIN AND PROTECT (E) SIDEWALK	

BOULDER SIZE SCHEDULE		QTY.
A	12" - 18" W	19 EA.
B	24" W	30 EA.
C	36" W	36 EA.

NOTE:
1. BOULDER SELECTION AND PLACEMENT TO BE VERIFIED BY LANDSCAPE ARCHITECT.

POUR-IN-PLACE LEGEND - FLEXGROUND

- 25% STANDARD BLUE
  60% LIGHT BLUE
  15% BLACK
  (ALIPHATIC URETHANE)
- 40% BEIGE
  40% BROWN
  20% BLACK
  (ALIPHATIC URETHANE)

NORTH

0 10 20
SCALE: 1" = 10'
@30x42

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PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

CONSTRUCTION PLAN - AREA A

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
4.		
5.		
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8.		

PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

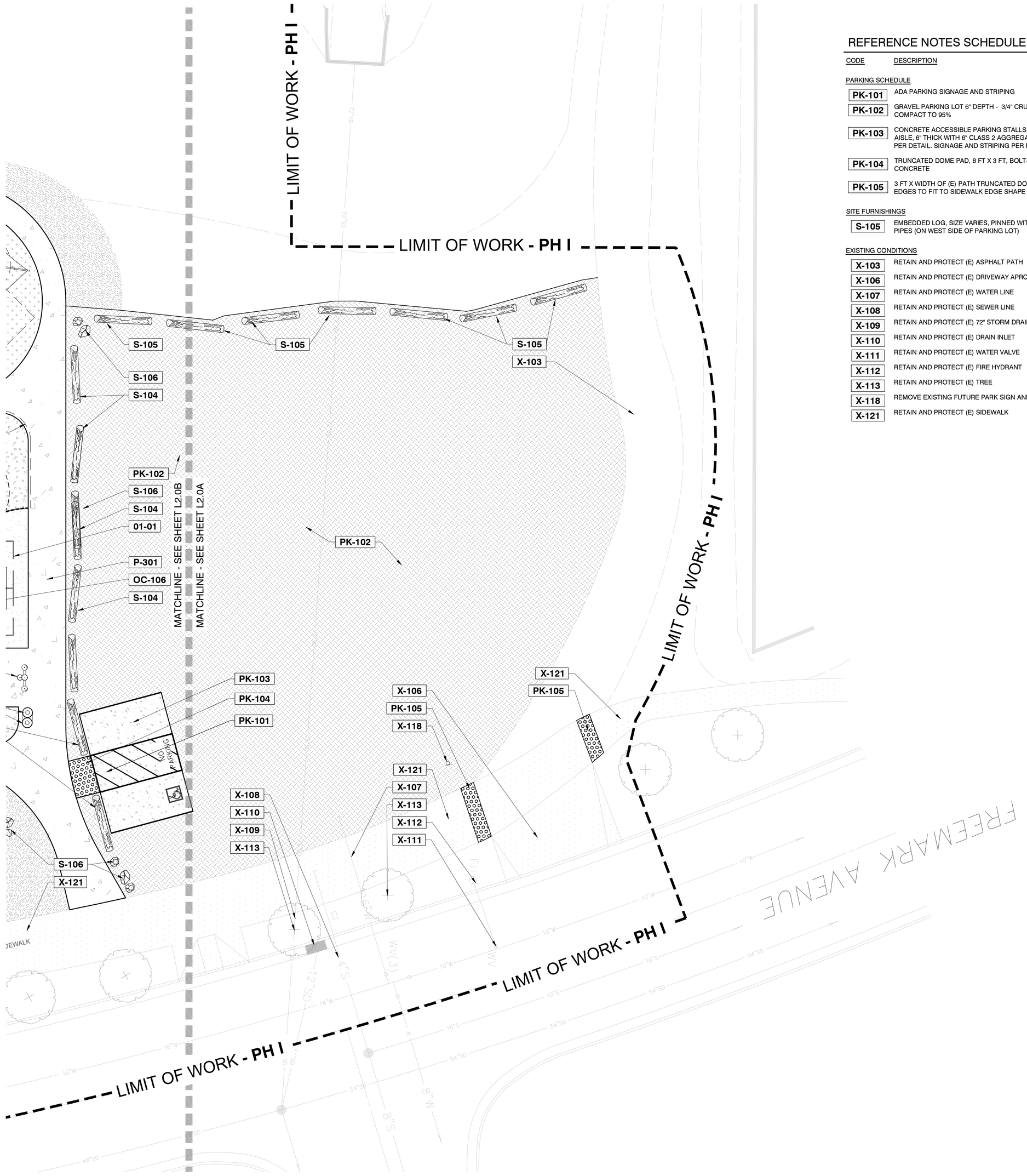
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Page 38 of 412



REFERENCE NOTES SCHEDULE AREA B

CODE	DESCRIPTION	DETAIL
PARKING SCHEDULE		
PK-101	ADA PARKING SIGNAGE AND STRIPING	3/L2.3
PK-102	GRAVEL PARKING LOT 6" DEPTH - 3/4" CRUSHED ANGULAR ROCK. COMPACT TO 95%	6/L2.4
PK-103	CONCRETE ACCESSIBLE PARKING STALLS AND ACCESSIBLE AISLE, 6" THICK WITH 6" CLASS 2 AGGREGATE BASE AND REBAR PER DETAIL. SIGNAGE AND STRIPING PER PLAN	4/L2.3
PK-104	TRUNCATED DOME PAD, 8 FT X 3 FT, BOLT-ON OVER STANDARD 4" CONCRETE	4/L2.3
PK-105	3 FT X WIDTH OF (E) PATH TRUNCATED DOME PAD, GLUE-ON. CUT EDGES TO FIT TO SIDEWALK EDGE SHAPE AS NEEDED	
SITE FURNISHINGS		
S-105	EMBEDDED LOG, SIZE VARIES, PINNED WITH 1" X 6'-0" GALVANIZED PIPES (ON WEST SIDE OF PARKING LOT)	3/L2.4
EXISTING CONDITIONS		
X-103	RETAIN AND PROTECT (E) ASPHALT PATH	
X-106	RETAIN AND PROTECT (E) DRIVEWAY APRON	
X-107	RETAIN AND PROTECT (E) WATER LINE	
X-108	RETAIN AND PROTECT (E) SEWER LINE	
X-109	RETAIN AND PROTECT (E) 72" STORM DRAIN LINE	
X-110	RETAIN AND PROTECT (E) DRAIN INLET	
X-111	RETAIN AND PROTECT (E) WATER VALVE	
X-112	RETAIN AND PROTECT (E) FIRE HYDRANT	
X-113	RETAIN AND PROTECT (E) TREE	
X-118	REMOVE EXISTING FUTURE PARK SIGN AND RETURN TO CITY	
X-121	RETAIN AND PROTECT (E) SIDEWALK	

NORTH

0 10 20

SCALE: 1" = 10'
@30x42

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PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

CONSTRUCTION PLAN - AREA B

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
4.		
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8.		

PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

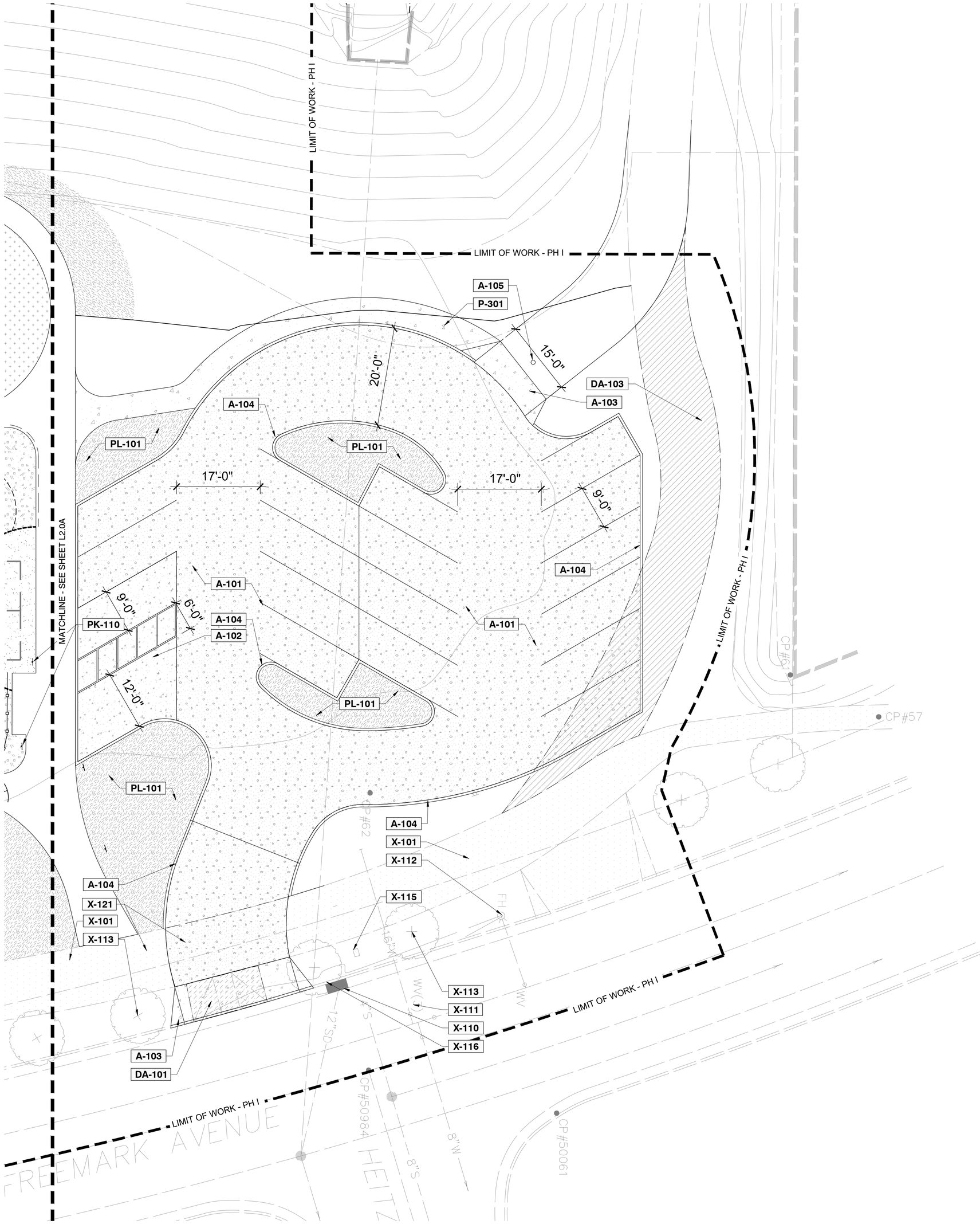
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L2.0B

SHEET 14 OF 31

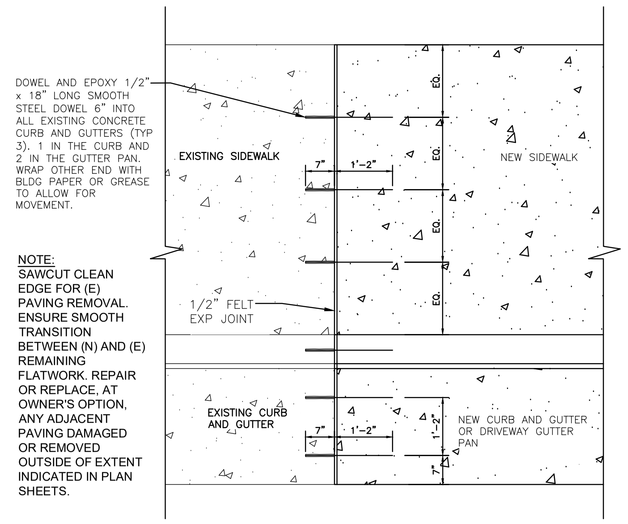
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PLOT DATE: February 26, 2026 - 7:12 PM
FILE NAME: G:\MDG\2600-2699\2615 General Vang Pao Park MP and Playground\2615 CAD\CDs\SHEETS\2615-L2.0-CONS.dwg
PAGE 38 of 412

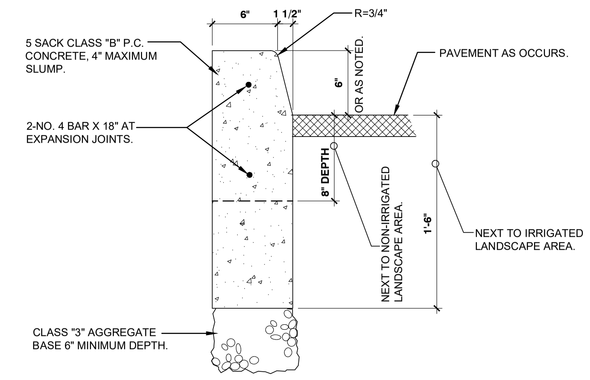


REFERENCE NOTES SCHEDULE ALTERNATE PARKING LOT

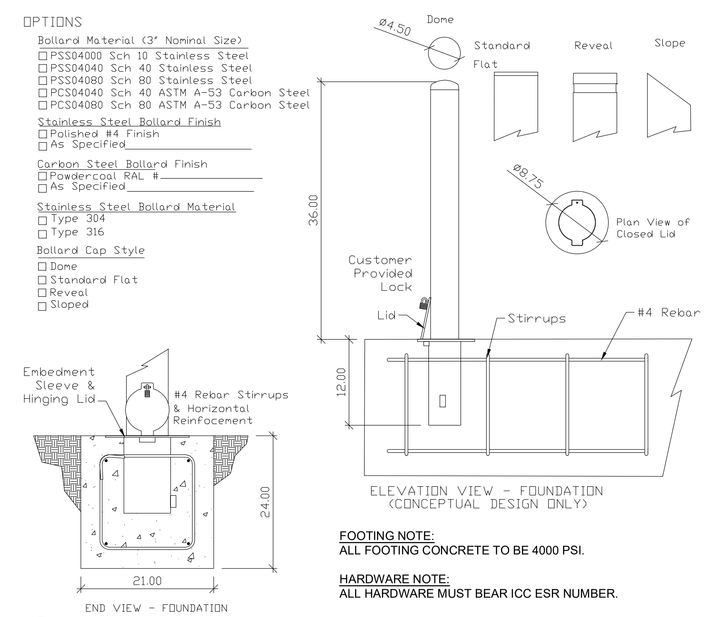
CODE	DESCRIPTION	DETAIL
A-101	ASPHALT PARKING LOT. DIMENSIONING AND STRIPING PER PLAN	
A-102	CONCRETE ADA PARKING STALLS, 6" THICK WITH 6" CLASS 2 AGG. BASE AND REBAR PER DETAIL. SIGNAGE AND STRIPING PER PLAN	7/L2.3
A-103	STANDARD GRAY CONCRETE DRIVEWAY APRON, PER CITY STANDARD	
A-104	6"W CONCRETE CURB	2/L2.0B(ALT)
A-105	REMOVABLE LOCKING BOLLARD	3/L2.0B(ALT)
DA-101	DEMO (E) CONCRETE PEDESTRIAN RAMP. DISPOSE OF OFF-SITE	
DA-103	DEMO (E) ASPHALT PATH. DISPOSE OF OFF-SITE	
PAVING/SURFACING		
P-301	STANDARD GREY CONCRETE 4" DEEP, MEDIUM BROOM FINISH. SCORELINES AND EXPANSION JOINTS PLACED PER DETAIL AND SPECIFICATIONS	6/L2.3
PARKING SCHEDULE		
PK-110	ADA PARKING SIGNAGE	3/L2.3
PLANTING		
PL-101	BARK MULCH LANDSCAPE AREA, 3" DEEP, NON-COMPACT PER SPECIFICATIONS	
EXISTING CONDITIONS		
X-101	RETAIN AND PROTECT (E) CONCRETE SIDEWALK	
X-110	RETAIN AND PROTECT (E) DRAIN INLET	
X-112	RETAIN AND PROTECT (E) FIRE HYDRANT	
X-113	RETAIN AND PROTECT (E) TREE	
X-115	RETAIN AND PROTECT (E) ELECTRICAL UTILITY BOX	
X-116	RETAIN AND PROTECT (E) CONCRETE CURB AND GUTTER	
X-121	RETAIN AND PROTECT (E) SIDEWALK	



1 L2.0B(ALT) **DOWEL AT CURB, GUTTER AND SIDEWALK**
ADD ALTERNATE



2 L2.0B(ALT) **CONCRETE CURB AT PARKING**
ADD ALTERNATE



3 L2.0B(ALT) **REMOVABLE LOCKING BOLLARD - 1-800 BOLLARDS INC.**
NTS

NORTH

0 10 20
SCALE: 1" = 10'
@30x42

811 Know what's BELOW CALL before you dig.

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GREG MELTON #2121
EXP. 11-26
STATE OF CALIFORNIA

CONSULTANT

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CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

CONSTRUCTION PLAN - AREA B (ALTERNATE PARKING LOT OPTION)

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
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PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

SHEET NUMBER

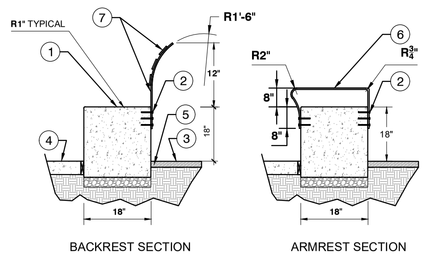
L2.0B ALT

SHEET 15 OF 31

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1. CAST IN PLACE CONCRETE SEATWALL PER PLAN
2. EPOXY 3/8" WEDGE EXPANSION ANCHOR, 4" DEEP
3. LANDSCAPE FINISH GRADE PER PLAN.
4. ADJACENT SURFACE PER PLAN
5. EXPANSION JOINT
6. FLAT BAR STEEL ARM FOR SEATWALL. 1/4" STEEL, 2" WIDE ANCHOR TO BACK AND FRONT OF SEAT WALL. COLOR: RAL 5001
7. FLAT BAR STEEL 3/8" X 4" WIDE CROSS PIECES AND VERTICAL, RAL 5001. VERTICAL BARS EVERY 24" O.C.

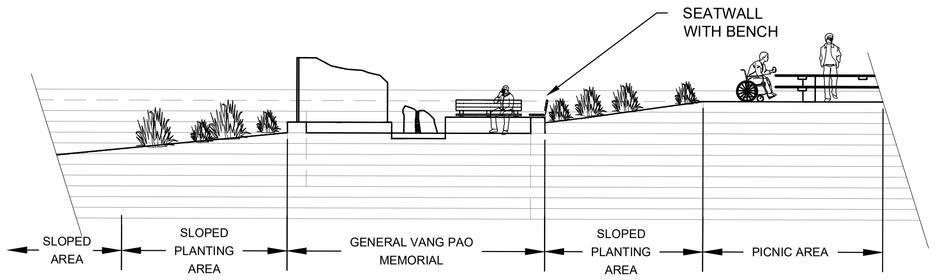


BACKREST SECTION ARMREST SECTION

* CONFIRM FINAL DESIGN W/ LANDSCAPE ARCHITECT

2 L2.1 BENCH AT MEMORIAL SECTION (BID ALTERNATE)

N.T.S.

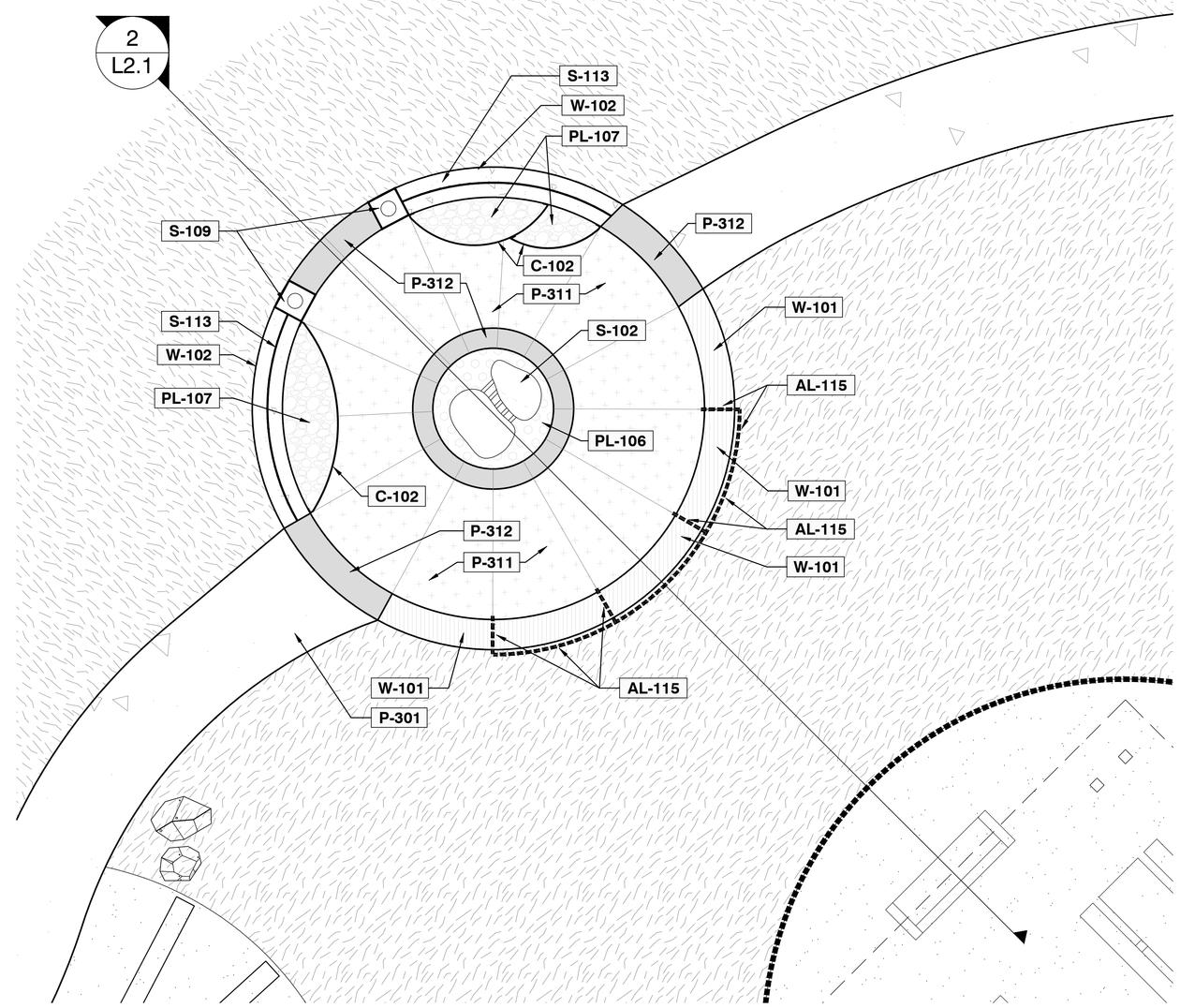


3 L2.1 SECTION AT MEMORIAL AND SHADE STRUCTURE (FOR ILLUSTRATIVE PURPOSES ONLY)

NTS

REFERENCE NOTES SCHEDULE MEMORIAL ENLARGEMENT

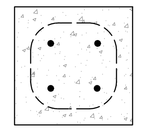
CODE	DESCRIPTION	DETAIL
DEDUCTIVE ALTERNATES		
AL-115	CUSTOM 3/8" STEEL BENCH AND 1/4" STEEL FLATBAR ARMS MOUNTED ON SEATWALL. POWDER COATED COLOR: RAL 5001	2/L2.1
CURB		
C-102	1/2" CORTEN STEEL CUSTOM PLANTER EDGING. GRIND 1/16" RADIUS ALL EDGES. 16"H (12"H ABOVE FG) OR 12"H (8"H ABOVE FG) ANCHOR EDGING TO CURB WALL, TYP.	4/L2.1
PAVING/SURFACING		
P-301	STANDARD GREY CONCRETE 4" DEEP, MEDIUM BROOM FINISH. SCORELINES AND EXPANSION JOINTS PLACED PER DETAIL AND SPECIFICATIONS	6/L2.3
P-311	COLORED CONCRETE 4" DEEP; WITH MEDIUM BROOM FINISH. SCORELINE AND EXPANSION JOINTS PER PLAN. COLOR: DAVIS COLORS: PEBBLE 641 WITH SPARKLE GRAIN FINISH	6/L2.3
P-312	COLORED CONCRETE BAND 4" DEEP; WITH MEDIUM BROOM FINISH. SCORELINE AND EXPANSION JOINTS PER PLAN. COLOR: DAVIS COLORS: GRAPHITE 8084	6/L2.3
PLANTING		
PL-106	3/8" ROUNDED SEASIDE AGGREGATE, IVORY,12" DEEP. USED FOR PEBBLE HARP	3/L2.2
PL-107	1"-2" BLACK MEXICAN PEBBLES @ ELEVATED STEEL PLANTERS, 2 LAYERS OF STONES, ~2"-4" DEEP	
SITE FURNISHINGS		
S-102	PEBBLE HARP FEATURE. FINAL DESIGN TBD BY LANDSCAPE ARCHITECT	3/L2.2
S-109	PRECAST CONCRETE 5'H COLUMNS. DESIGN TBD BY LANDSCAPE ARCHITECT. DAVIS COLORS: GRAPHITE 8084	4/L2.1
S-113	GENERAL VANG PAO MEMORIAL - 1/4" STEEL PANELS PER PLAN AND DETAILS. POWDER COATED RAL 5001. DESIGN TBD BY LANDSCAPE ARCHITECT	4/L2.1
WALL		
W-101	CAST IN PLACE CONCRETE SEATWALL (18"H X 18"W) DAVIS COLOR: GRAPHITE 8084	5/L2.5
W-102	GENERAL VANG PAO MEMORIAL - 1'-6" X 2'-0" CONCRETE CURB WALL PER PLAN AND DETAIL. DAVIS COLORS: GRAPHITE 8084	4/L2.1



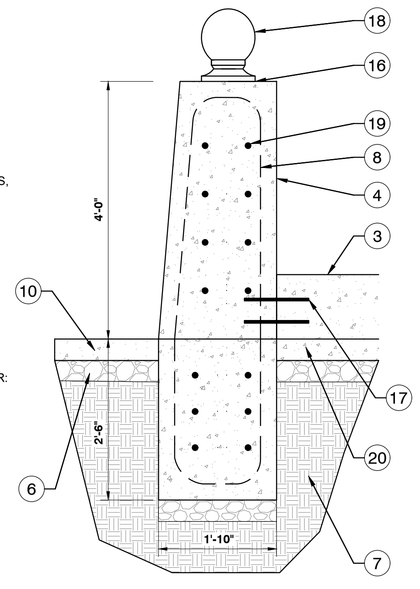
1 L2.1 GENERAL VANG PAO MEMORIAL PLAZA - ENLARGED

1/4" = 1'-0"

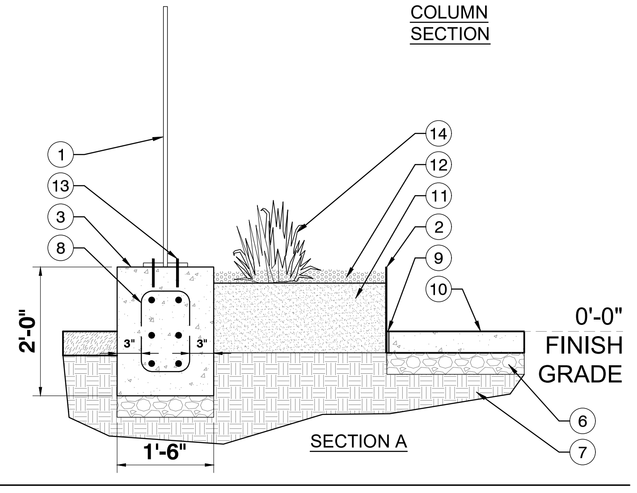
1. 1/4" STEEL PANEL POWDER COATED RAL 5001. FINAL DESIGN TBD BY LANDSCAPE ARCHITECT
2. 1/2" CORTEN STEEL CUSTOM PLANTER EDGING. GRIND 1/16" RADIUS ALL EDGES. 16"H (12" ABOVE F.G.) AND 12"H (8" ABOVE F.G.). ANCHOR EDGING TO CURB WALL, TYP.
3. CONCRETE CURB WALL PER PLAN, 1'-6" x 2'-0". DAVIS I-COLOR: GRAPHITE 8084 SMOOTH TROWEL FINISH
4. CAST-IN-PLACE CONCRETE I-COLUMNS WITH DECORATIVE FINIALS, HANDALSTONE. MODEL# FN4,10" X 13 1/2", DAVIS COLOR: GRAPHITE 8084 SMOOTH TROWEL FINISH
5. (14) 6" DIA. BRONZE PLAQUES ANCHORED TO 1/4" STEEL MEMORIAL PANEL
6. 4" CLASS II AGGREGATE BASE COMPACTED TO 95% RELATIVE DENSITY
7. UNDISTURBED SUBGRADE
8. #4 REBAR HOOPS
9. EXPANSION JOINT PER CONCRETE DETAIL
10. CONCRETE SURFACE PER PLAN
11. AMENDED PLANTER SOIL PER PLAN
12. 1" - 2" BLACK MEXICAN PEBBLE AT ELEVATED STEEL PLANTERS, TWO LAYERS OF STONE DEEP.
13. 3/8"-16 WEDGE EXPANSION ANCHOR, 4" DEEP THROUGH BASE PLATE. ANCHOR EVERY 18" O.C.
14. PLANTING AND IRRIGATION PER PLAN
15. ETCHED TEXT AREA WITH GRAPHIC TO BE PROVIDED BY LANDSCAPE ARCHITECT
16. ANCHOR FINIAL WITH HIGH STRENGTH EPOXY
17. 12" STAINLESS STEEL DOWEL INTO CURB
18. HANDALSTONE FINIAL. MODEL# FN4,10" X 13 1/2", DAVIS COLOR: GRAPHITE 8084 SMOOTH TROWEL FINISH
19. 3" STEEL #6 REBAR CROSS BARS
20. MEMORIAL FOOTING PER PLAN



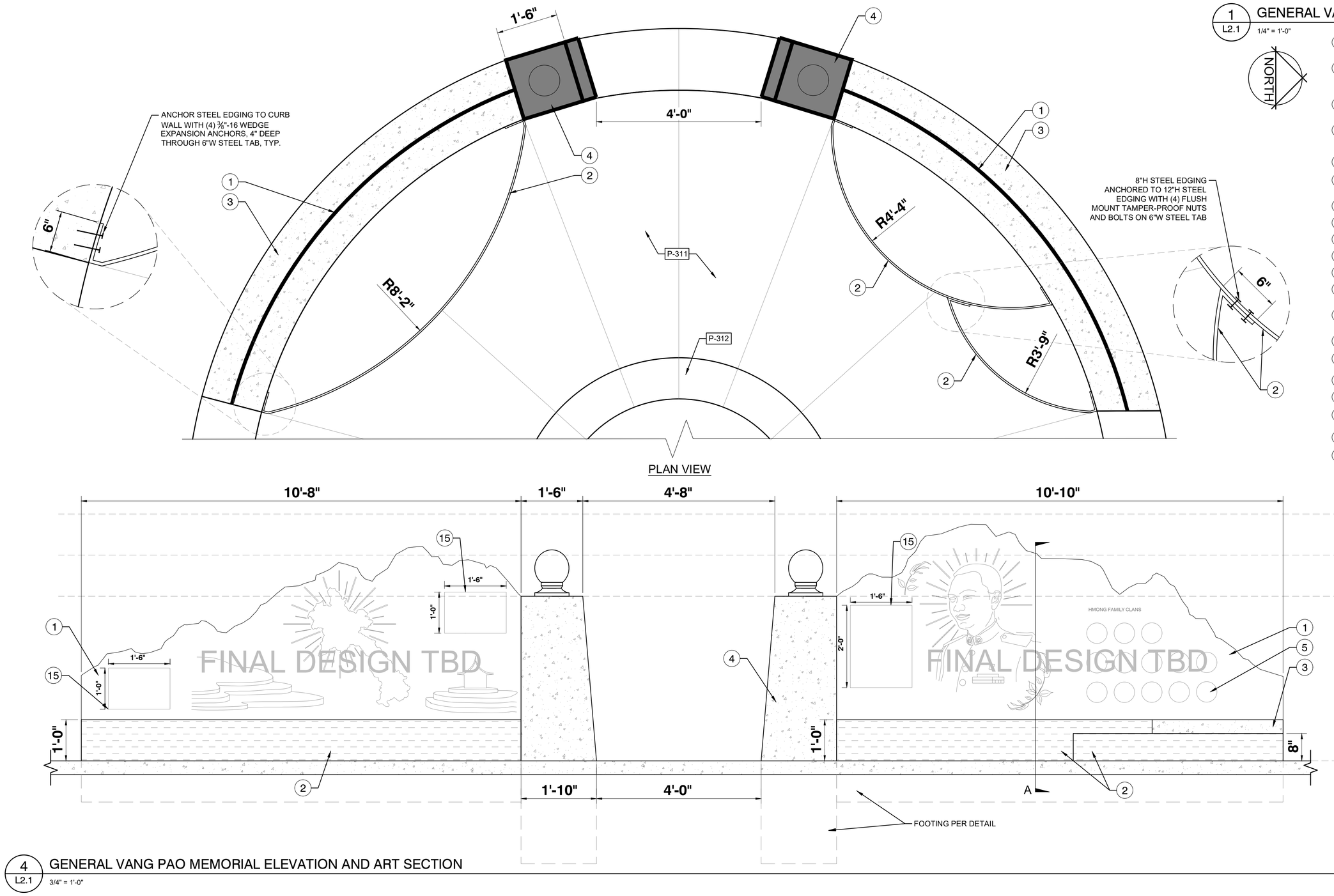
PLAN VIEW



COLUMN SECTION



SECTION A



PLAN VIEW

4 L2.1 GENERAL VANG PAO MEMORIAL ELEVATION AND ART SECTION

3/4" = 1'-0"

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PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

CONSTRUCTION PLAN - ENLARGEMENTS

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
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PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

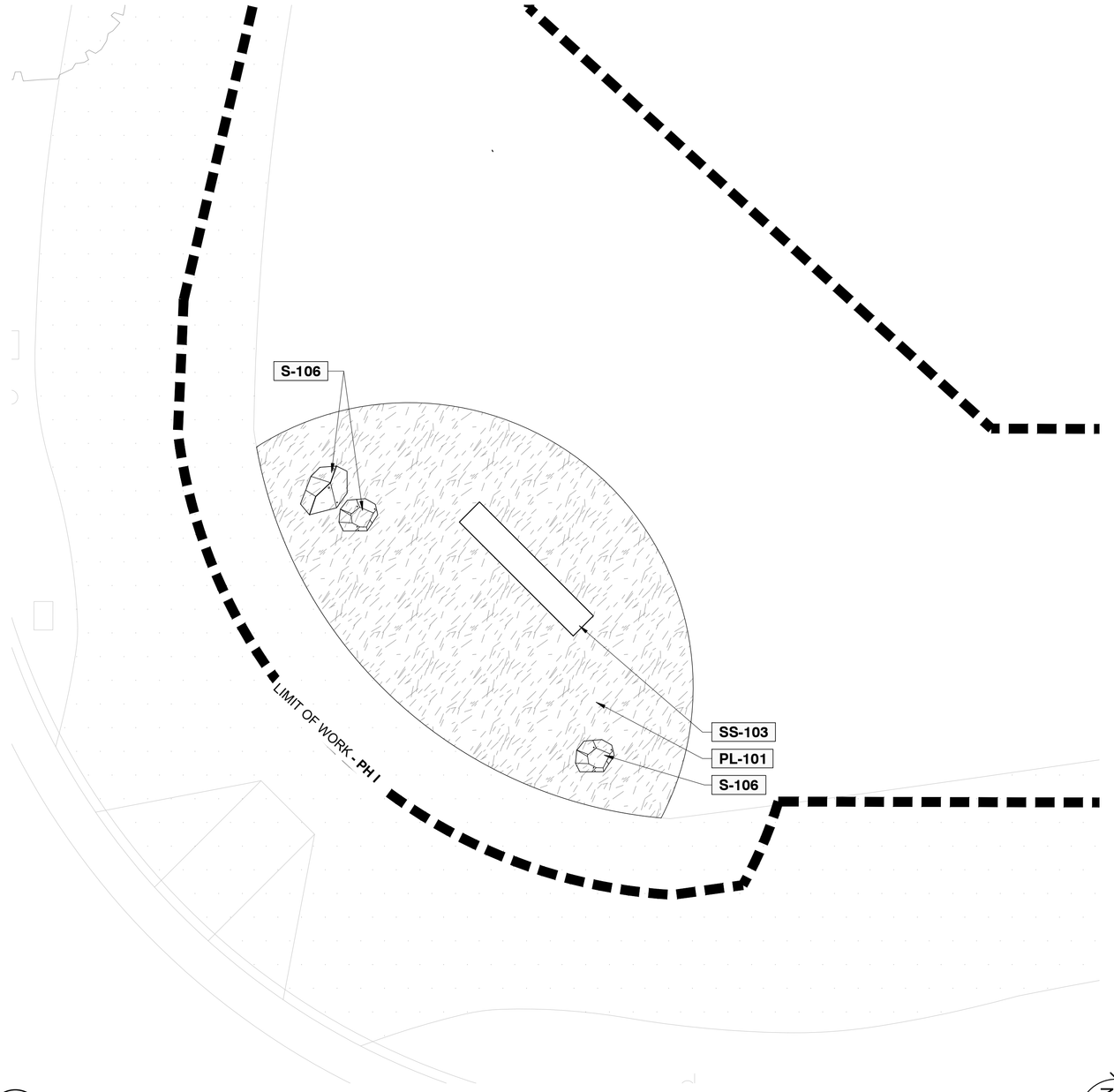
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Page 41 of 412



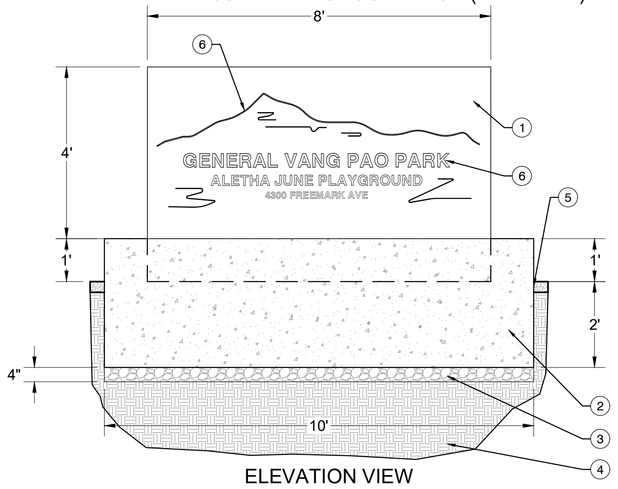
REFERENCE NOTES SCHEDULE SOUTH ENTRANCE

CODE	DESCRIPTION	DETAIL
PLANTING		
PL-101	BARK MULCH LANDSCAPE AREA, 3" DEEP, NON-COMPACT PER SPECIFICATIONS	
SITE FURNISHINGS		
S-106	EMBEDDED BOULDER, SIZE VARIES. SEE SCHEDULE FOR SIZING	4/L2.4
SITE STRUCTURES		
SS-103	STEEL MONUMENT SIGN AT CORNER - GENERAL VANG PAO MEMORIAL PARK	2/L2.2

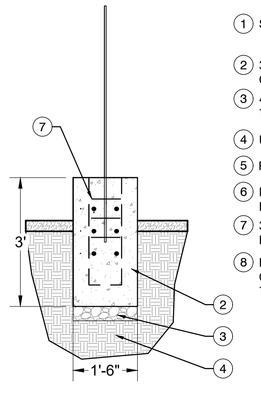
1 L2.2 SOUTH ENTRANCE - ENLARGED
1/4"=1'-0"

NORTH

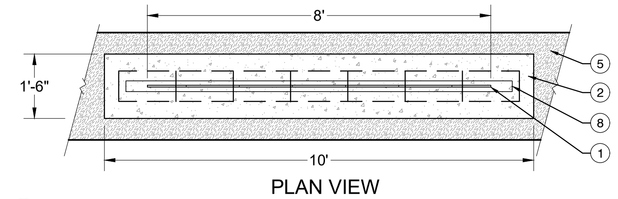
ALETHA JUNE PLAYGROUND SIGN (ART T.B.D.)



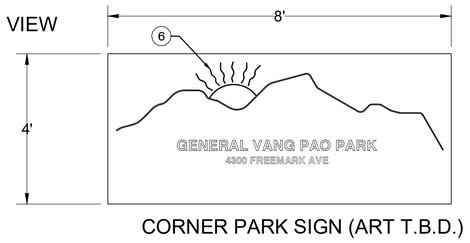
ELEVATION VIEW



SECTION VIEW



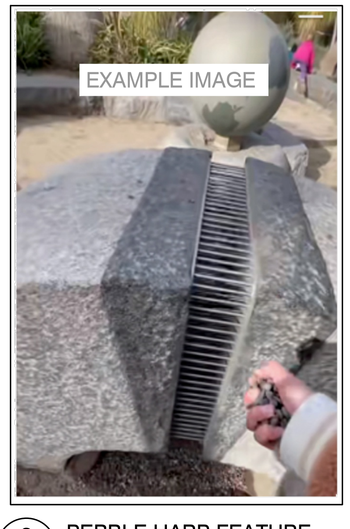
PLAN VIEW

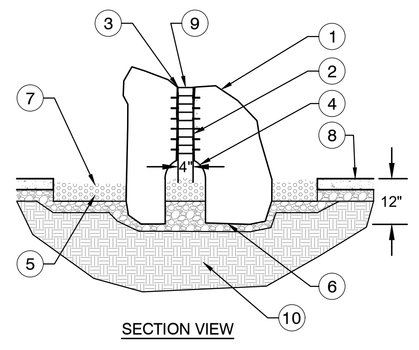


CORNER PARK SIGN (ART T.B.D.)

1. STEEL SIGN, 1/2" THICKNESS
2. 3'-0" X 18" X 10'-0" CONCRETE FOOTING, COLOR: DAVIS IN GRAPHITE (CARBON) 8084
3. 4" CLASS II AGGREGATE BASE, COMPACTED TO 95% RELATIVE DENSITY
4. UNDISTURBED SUB-GRADE
5. FINISHED GRADE PER PLAN
6. NEGATIVE CUT-OUT SPACE. 1/8"W MIN., DESIGN T.B.D. BY LANDSCAPE ARCHITECT
7. 3" STEEL #6 REBAR CROSS BARS WELDED TO EACH SIDE OF STEEL SHEET
8. EPOXY STEEL SIGN INTO PLACE WITH EPOXY COLOR (T.B.D.) TO MATCH FOOTING - SLOT TO BE 3" W X 9" DEEP. CENTER SIGN TO SLOT.

2 L2.2 STEEL MONUMENT SIGN - ALETHA JUNE PLAYGROUND & CORNER SIGN





SECTION VIEW

NOTE: FOR BID PURPOSES ONLY, FINAL DESIGN T.B.D. BY LANDSCAPE ARCHITECT

1. CONTRACTOR TO INSTALL BOULDERS WITH AID OF MANUFACTURER, INSTALL THE PIPE HARP BETWEEN THE BOULDERS. PIPE HARP TO BE PROVIDED BY MANUFACTURER.
2. ANCHOR HARP INSTRUMENT TO SMOOTH SIDE OF STONE WITH EPOXY GLUE AND 1/4" X 2"ANCHOR BOLTS DRILLED AND EPOXY INTO THE BOULDER ON BOTH SIDES
3. 4" SPACING BETWEEN 1/4" STEEL PLATE
4. CUT BOULDER LENGTHWISE TO ALLOW PEA GRAVEL TO GATHER
5. 4" DEEP OF BASE ROCK COMPACTED TO 95% R.D.
6. BURY STONE 12" BELOW FINISH GRADE IN BASE ROCK
7. 12" DEEP PEA GRAVEL AS SPECIFIED PER PLAN
8. CONCRETE PAVING, AS SPECIFIED PER PLANS
9. 1-1/2" SPACING BETWEEN 1/2" PIPE/THIN WALLED. ALTERNATE EACH PIPE IN A TRIANGLE PATTERN, 2" SPACING
10. UNDISTURBED SUB-GRADE

3 L2.2 PEBBLE HARP FEATURE

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REGISTERED LANDSCAPE ARCHITECT
GREG MELTON #4217
EXP. 11-26
STATE OF CALIFORNIA

CONSULTANT

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

CONSTRUCTION PLAN - ENLARGEMENTS

DATES

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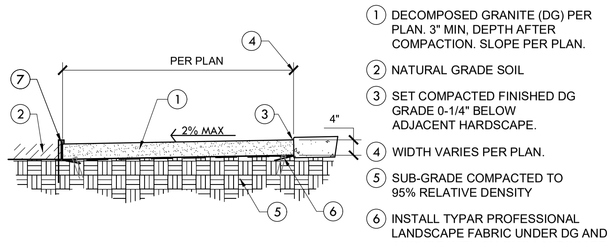
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SHEET 17 OF 31

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Page 42 of 112

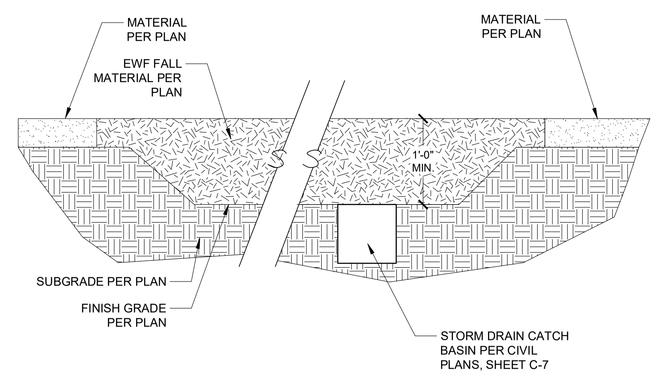


TYPICAL SECTION NEXT TO CONCRETE

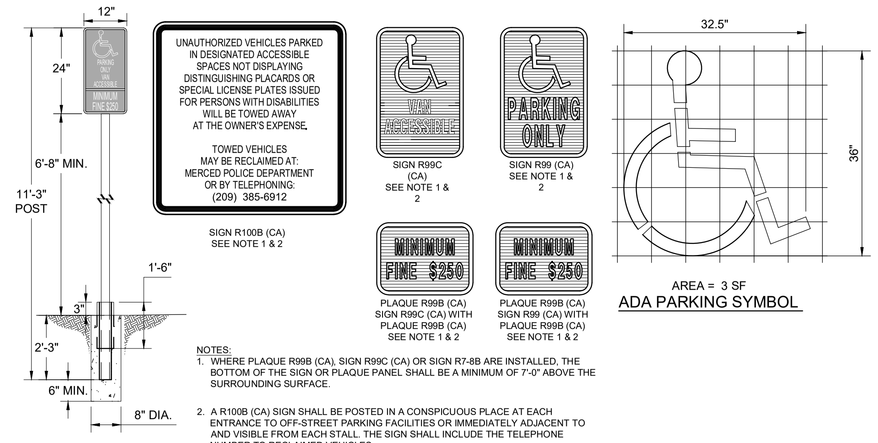
1. DECOMPOSED GRANITE (DG) PER PLAN. 3" MIN. DEPTH AFTER COMPACTION. SLOPE PER PLAN.
2. NATURAL GRADE SOIL
3. SET COMPACTED FINISHED DG GRADE 0-1/4" BELOW ADJACENT HARDSCAPE.
4. WIDTH VARIES PER PLAN.
5. SUB-GRADE COMPACTED TO 95% RELATIVE DENSITY
6. INSTALL TYPAR PROFESSIONAL LANDSCAPE FABRIC UNDER DG AND ANCHOR WITH 6" LONG LANDSCAPE STAPLES EVERY 24" O.C. IN ALL DIRECTIONS. TURN FABRIC EDGES UNDER SOIL AT DG LIMITS.
7. 4"H ROLL TOP 14 GAUGE STEEL LANDSCAPE EDGING WITH STEEL STAKES. POWDER COAT BROWN, DURAEDGE OR APPROVED EQUAL. INSTALL PER MFR. RECOMMENDATIONS

NOTES:
1. DECOMPOSED GRANITE SHALL BE QUARRY FINES, ¼ INCH OR LESS. COLOR: GOLD. CONTRACTOR TO SUBMIT SAMPLE FOR APPROVAL BY LANDSCAPE ARCHITECT.
2. APPLY WEED KILLER AND PRE-EMERGENT TO DG AREAS PRIOR TO PLACEMENT OF DG.
3. INSTALL IN 2 EQUAL LIFTS.
4. AFTER PLACEMENT, THOROUGHLY WATER UNTIL ENTIRE DEPTH IS MOIST. COMPACT WITH A 1,000 TO 3,000 LB ROLLER AFTER GRADING AND WETTING.

1 L2.3 DECOMPOSED GRANITE SURFACING
N.T.S.



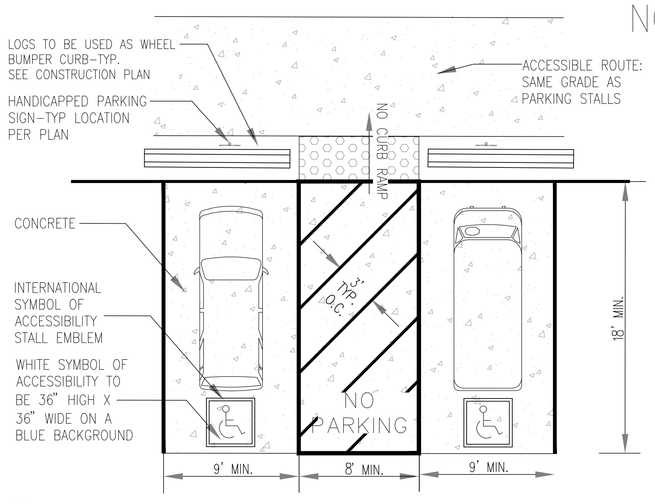
2 L2.3 DRAINAGE AT PLAY AREA
NTS



NOTES:
1. WHERE PLAQUE R99B (CA), SIGN R99C (CA) OR SIGN R7-8B ARE INSTALLED, THE BOTTOM OF THE SIGN OR PLAQUE PANEL SHALL BE A MINIMUM OF 7'-0" ABOVE THE SURROUNDING SURFACE.
2. A R100B (CA) SIGN SHALL BE POSTED IN A CONSPICUOUS PLACE AT EACH ENTRANCE TO OFF-STREET PARKING FACILITIES OR IMMEDIATELY ADJACENT TO AND VISIBLE FROM EACH STALL. THE SIGN SHALL INCLUDE THE TELEPHONE NUMBER TO RECLAIMED VEHICLES.
3. PARKING STALL, SIGNAGE, RAMP, AND STRIPING TO CONFORM TO CALTRANS REVISED STANDARD PLAN RSP A90B.
4. ALL CONCRETE SHALL BE 4,000 P.S.I.

3 L2.3 ADA PARKING SIGNAGE AND STRIPING

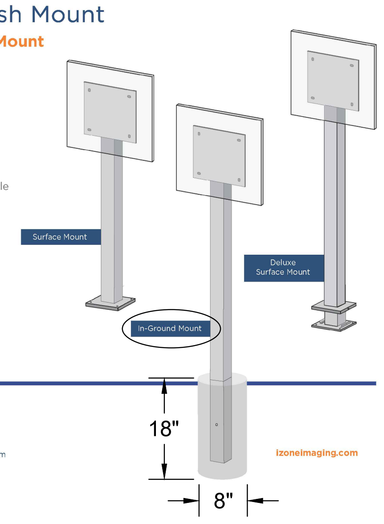
HANDICAPPED SPACES – CAR AND VAN STRIPING TYPE



NOTES:
1. HANDICAPPED SPACES SHALL BE PROVIDED PER CHAPTER 2-17 OF THE STATE BUILDING CODE. (CALIFORNIA ADMINISTRATIVE CODE, TITLE 24 PART 2)
2. HANDICAPPED SPACES MUST PERMIT USE OF EITHER CAR/VAN DOORS.
3. BUMPER REQUIRED WHEN NO CURB OR BARRIER IS PROVIDED WHICH WILL PREVENT ENCROACHMENT OF CARS OVER WALKWAYS.
4. WHEELCHAIR MUST NOT BE FORCED TO GO BEHIND CARS OTHER THAN THEIR OWN.
5. SURFACE SLOPES OF PARKING SPACES SHALL BE A MINIMUM POSSIBLE TO PROVIDE ADEQUATE DRAINAGE AND SHALL NOT EXCEED 2% GRADIENT IN ANY DIRECTION.
6. ACCESSIBLE AISLE IS MARKED BY SOLID BORDER THAT IS PAINTED BLUE, THAT CONTRASTS WITH THE PARKING SURFACE. WITHIN THE BLUE BORDER HATCHED LINES THAT ARE 36" ON CENTER ARE PAINTED WITH A COLOR THAT CONTRASTS WITH THE PARKING SURFACE, PREFERABLY BLUE OR WHITE.

4 L2.3 CONCRETE ACCESSIBLE PARKING AND STRIPING - NO CURB RAMP
NTS

Single Pedestal - Flush Mount
In-Ground Mount and Surface Mount
All Aluminum Construction



- **Standard Posts**
  3" x 3" post
  In-Ground Mount 72" or 96" long
  Surface Mount: 40" long
  * Custom post lengths available
  * Standard and custom color options available
- **Standard Mount Plates** for plate mount
  6" x 6" ✔12" x 18" ✔16" x 20"
- **Bracket Mount**
  Length depends on panel height
- **Basic and Deluxe** Surface Mount Options

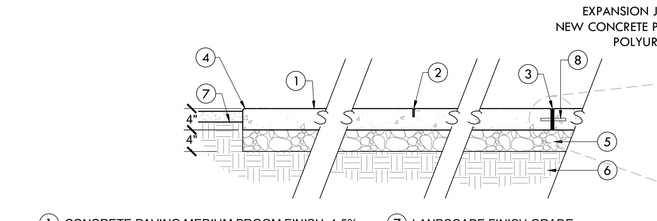
iZone imaging
Toll Free 888.464.9663
Local 254.778.0722
Fax 254.778.0938
Email info@izoneimaging.com
izoneimaging.com

NOTES:
- IN GROUND MOUNT
- 72" POST
- 6" X 6" MOUNT PLATE
FOOTING SIZE: 8" DIA x 18" DEEP



SIGN, SINGLE PEDESTAL - FIRST FIVE SIGN
NOTE: ART T.B.D. BY LANDSCAPE ARCHITECT

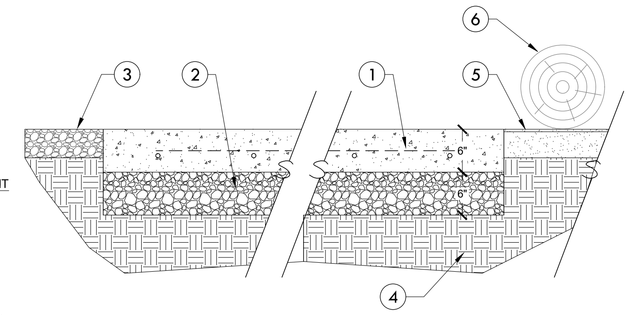
5 L2.3 SIGN, SINGLE PEDESTAL - FIRST FIVE SIGN
NTS



1. CONCRETE PAVING MEDIUM BROOM FINISH. 1.5% MAX CROSS SLOPE 4.5% MAX SLOPE ALONG WALKING PATH. COLOR PER CONSTRUCTION PLAN.
2. SCORELINE - 1-1/2" DEPTH, 1/4" WIDTH WITH 1/2" RADIUS EDGE. 7' O.C. MAX.
3. EXPANSION JOINT - PER PLAN OR 12' O.C. MAX. 1/4" X 3" FELT IN BETWEEN POURS, AND NEXT TO EXISTING CONCRETE, BUILDINGS OR OTHER VERTICAL SURFACES. INSTALL WITH 1/4" WIDE X 1/2" DEEP RESILIENT POLYURETHANE SEALANT. COLOR TO MATCH CONCRETE.
4. 1/2" RADIUS TOOLED EDGE.
5. CLASS II AGGREGATE BASE COMPACTED TO 95% RELATIVE DENSITY.
6. SUB-GRADE COMPACT TO 90% RELATIVE DENSITY.
7. LANDSCAPE FINISH GRADE.
8. INSTALL 12"X1/2" STEEL PENCIL ROD DOWELS AT 18" O.C. AT COLD JOINTS AND WHEN POURING NEW CONCRETE NEXT TO EXISTING; (6" INTO EXISTING AND 6" INTO NEW CONCRETE); LUBRICATE ONE END OF DOWEL. DOWELS INSTALL THROUGH FELT EXPANSION JOINTS WHERE THEY OCCUR.

NOTES:
1. PROVIDE POSITIVE DRAINAGE OF LANDSCAPE AWAY FROM CONCRETE AND STRUCTURES OR AS SEEN ON PLAN.
2. INSTALL SIDEWALK AND PADS 1-1/2" ABOVE EXISTING GRADE AS SHOWN.
3. MARK EDGE OF SIDEWALK AT SLEEVE LOCATION, BOTH SIDES OF SIDEWALK. 1/16" WIDE BY 2" LONG 1½" O.C.
   MARK: (1S) FOR 1" SLEEVE,
   (2S) FOR 2" SLEEVE,
   (3S) FOR 3" SLEEVE, ETC.

6 L2.3 STANDARD GREY CONCRETE 4" DEEP
NTS



1. CONCRETE PAVING WITH ADA PARKING STRIPING - MEDIUM BROOM FINISH - 6" THICK #4 REBAR @ 18" O.C. BOTH WAYS
2. CLASS II AGGREGATE BASE, COMPACTED TO 95% RELATIVE DENSITY - 6" THICK
3. GRAVEL PARKING LOT PER PLAN AND DETAIL
4. COMPACTED SUBGRADE
5. 4" CONCRETE WITH TRUNCATED DOME PAD BOLTED ON PER PLAN
6. LOGS USED AS WHEELSTOPS PER PLAN

7 L2.3 CONCRETE PAVEMENT FOR ADA PARKING
1" = 1'-0"

MDG
MELTONDESIGNGROUP
820 BROADWAY ST.
CHICO, CA 95928
(530) 899-1616
meltondg.com

LICENSE

REGISTERED LANDSCAPE ARCHITECT GREG MELTON #2171 EXP. 11-26 STATE OF CALIFORNIA

CONSULTANT

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

CONSTRUCTION DETAILS

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
4.		
5.		
6.		
7.		
8.		

PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

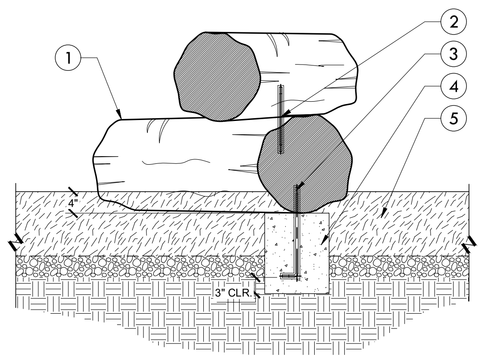
SHEET NUMBER

L2.3

SHEET 18 OF 31

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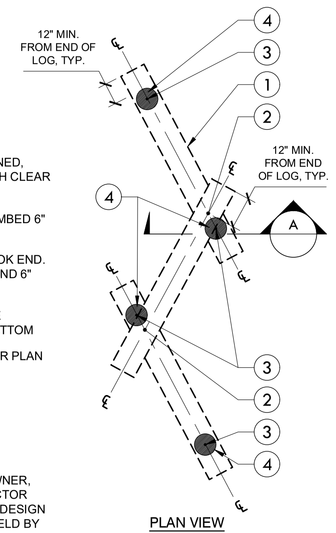
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SECTION A

1. LOG BY OLD LAKE MILL. CLEANED, DE-BARKED, AND SEALED WITH CLEAR SEALANT, TYP.
2. 12" THREADED ROD, EPOXY EMBED 6" INTO TOP AND BOTTOM LOG
3. 1" DIA. THREADED ROD W/ HOOK END. EMBED 12" INTO CONC. FTG. AND 6" MIN. IN BOTTOM LOG
4. 12" DIA. x 15" DEEP CONCRETE FOOTING AT EACH END OF BOTTOM LOGS
5. ENGINEERED WOOD FIBER PER PLAN

NOTES:
1. PRE-PURCHASED BY OWNER, INSTALLED BY CONTRACTOR
2. LOG STACKING LAYOUT DESIGN TO BE CONFIRMED IN FIELD BY LANDSCAPE ARCHITECT

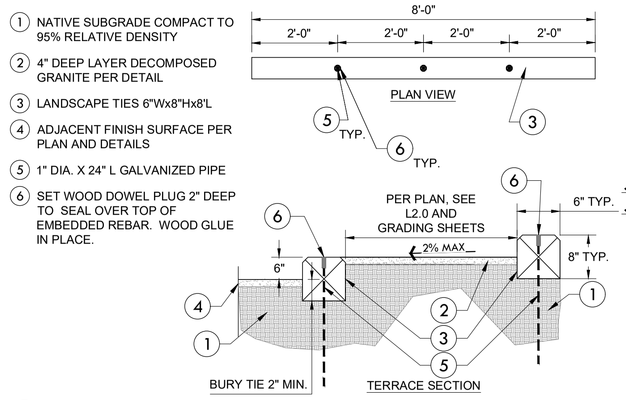


PLAN VIEW

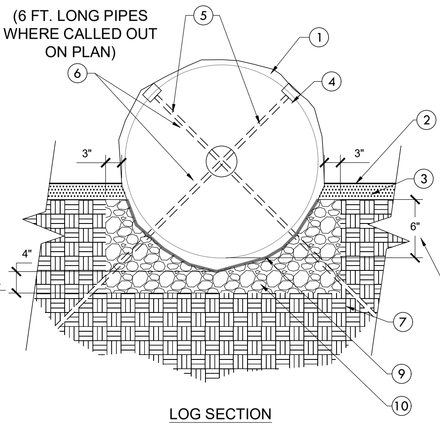
1 L2.4 NATURAL CLIMBING LOGS - OLD LAKE MILL

NTS

1. NATIVE SUBGRADE COMPACT TO 95% RELATIVE DENSITY
2. 4" DEEP LAYER DECOMPOSED GRANITE PER DETAIL
3. LANDSCAPE TIES 6"Wx8"Hx8'L
4. ADJACENT FINISH SURFACE PER PLAN AND DETAILS
5. 1" DIA. X 24" L GALVANIZED PIPE
6. SET WOOD DOWEL PLUG 2" DEEP TO SEAL OVER TOP OF EMBEDDED REBAR. WOOD GLUE IN PLACE.



2 L2.4 LANDSCAPE TIE TIMBERS

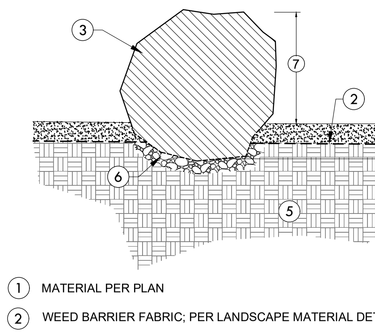


LOG SECTION

1. LOG - 18" - 36" DIAMETER. CLEANED, DEBARKED AND SEALED WITH CLEAR SEALANT.
2. FINISH GRADE PER PLANS
3. FINISH SURFACE/PLANTING PER PLAN
4. 2" DIA. WOOD DOWEL, INSERTED 3" MIN, SAND SMOOTH. LOCATE PLUG FLUSH WITH LOG SURFACE AND GLUE IN PLACE. WHERE LOGS OVERLAP, JOIN WITH SCANDINAVIAN SADDLE NOTCHES
5. 1" DIA. 4' LONG, GALVANIZED PIPE THROUGH LOG - 4 PER LOG. SPACED EVENLY AND 18" AWAY FROM ENDS OF LOG. WHERE LOGS OVERLAP, LOCATE PIPE THROUGH BOTH LOGS.
6. 1" DIA. 6'-0" LONG, GALVANIZED PIPE THROUGH LOGS AT WEST SIDE OF PARKING LOT. 4 PER LOG, SPACED EVENLY AND 18" AWAY FROM ENDS OF LOG.
7. SUBGRADE COMPACTED TO 90% R.D.
8. SET LOG 6" MIN. BELOW FINISH GRADE
9. GEOTEXTILE
10. 3/4" DRAIN ROCK

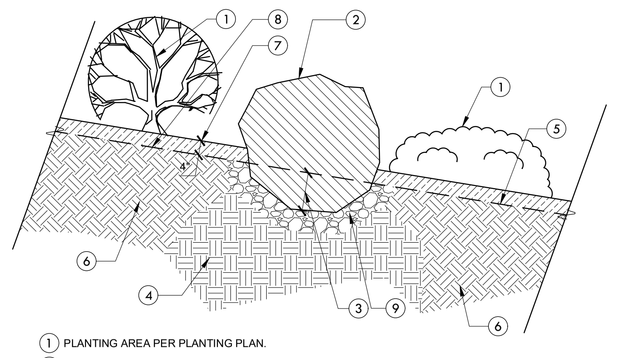
3 L2.4 EMBEDDED LOG

NTS



1. MATERIAL PER PLAN
2. WEED BARRIER FABRIC; PER LANDSCAPE MATERIAL DETAIL
3. WATER WASHED GRANITE BOULDERS, SIZE PER PLAN. CONTRACTOR SHALL PROVIDE PHOTO SAMPLE TO LANDSCAPE ARCHITECT FOR APPROVAL.
4. INSTALL BOULDER SO THAT 25% OF BOULDER IS BELOW FINISH GRADE.
5. NATIVE UNDISTURBED SUBGRADE
6. 6" CLASS II AGGREGATE BASE, COMPACT TO 95% RELATIVE DENSITY.
7. HEIGHT AND WEIGHT VARIES. SEE CONSTRUCTION SHEET L-2.0A

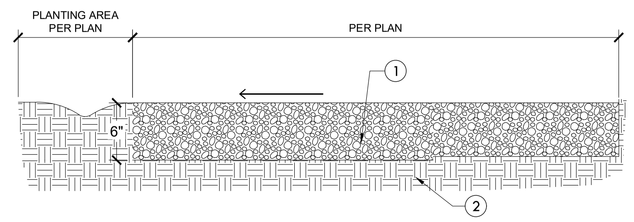
4 L2.4 EMBEDDED BOULDER



1. PLANTING AREA PER PLANTING PLAN.
2. BOULDER PER PLAN
3. INSTALL BOULDER SUCH THAT 25% OF BOULDER HEIGHT IS BENEATH GRADE.
4. NATIVE SOIL OR COMPACTED TO 95% RELATIVE DENSITY.
5. FINISH GRADE PER GRADING PLAN.
6. AMENDED SOIL PER PLANTING PLAN.
7. MULCH LAYER OR MATERIAL SPECIFIED PER PLAN
8. WEED BARRIER FABRIC; PER LANDSCAPE MATERIAL DETAIL
9. 6" II AGGREGATE BASE, COMPACTED TO 95% RELATIVE DENSITY

5 L2.4 EMBEDDED BOULDER ON SLOPE/HILLSIDE

NTS



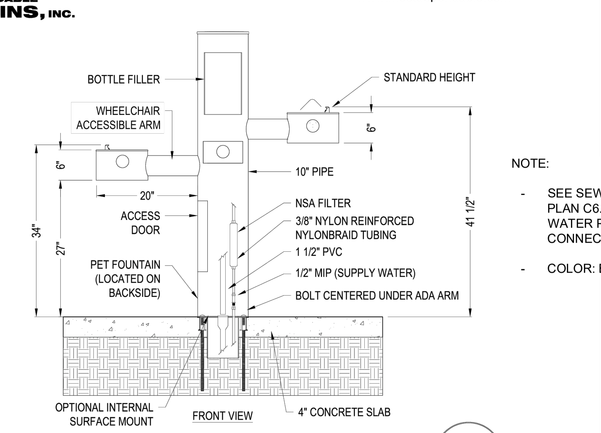
1. 6" OF 3/4" CRUSHED ANGULAR ROCK, COMPACT IN 2" LIFTS TO 95% R.D.
2. NATIVE SUBGRADE COMPACTED TO 95% RELATIVE DENSITY

NOTES:
1. GRAVEL COLOR: GREY. CONTRACTOR TO SUBMIT SAMPLE FOR APPROVAL BY LANDSCAPE ARCHITECT.
2. INSTALL IN 2 EQUAL LIFTS
3. DRAIN PER CIVIL GRADING PLAN
4. AFTER PLACEMENT, THOROUGHLY WATER UNTIL ENTIRE DEPTH IS MOIST. COMPACT WITH A 1,000 TO 3,000 LB ROLLER AFTER GRADING AND WETTING

6 L2.4 GRAVEL PARKING LOT

NTS

MOST DEPENDABLE FOUNTAINS, INC.
5705 COMMANDER DR. P.O. BOX 587
ARLINGTON, TN 38002-0587
PHONE: (901) 867-0039
www.mostdependable.com



NOTE:
- SEE SEWER AND WATER PLAN C6.0 FOR SEWER AND WATER POTABLE CONNECTION
- COLOR: BLACK

MANUFACTURER NOTES:
1. 3" AIR GAP BETWEEN WATER FIXTURE & TOP OF PET BOWL RIM

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 3354-167.

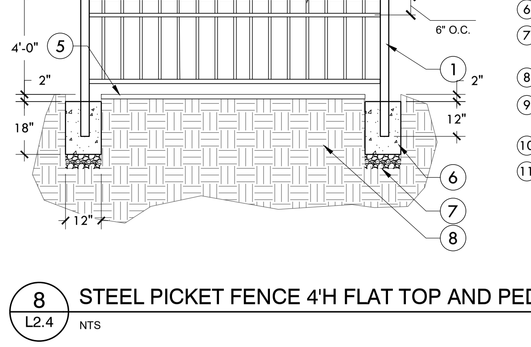
MODEL 10145 SM&SMSSFA
FOUNTAIN AND BOTTLE FILLER W/ PET FOUNTAIN (BACKSIDE)

3354-169 REVISION DATE 09/03/2024

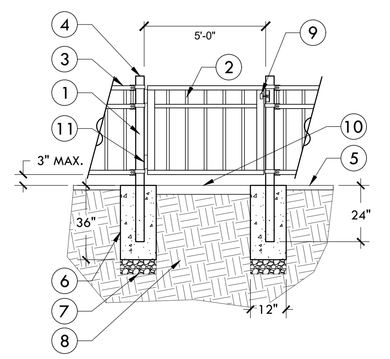
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7 L2.4 DRINKING FOUNTAIN

N.T.S.



1. 3" SQ. X 14 GAUGE POST
2. 3/4" SQ. X 14 GAUGE PICKET @ 4" O.C.
3. 1-1/2" SQ. X 14 GAUGE HORIZONTAL MEMBER
4. SOLID, SMOOTH EDGE POST CAP
5. FINISH SURFACE PER PLAN
6. CONCRETE FOOTING
7. CLASS II AGGREGATE BASE 4" DEPTH, COMPACT TO 95% R.D.
8. SUBGRADE, COMPACT TO 95%
9. SELF-LATCHING LOCKABLE GATE HARDWARE
10. PATH PER PLAN
11. HEAVY SELF-CLOSING HINGE (X2)

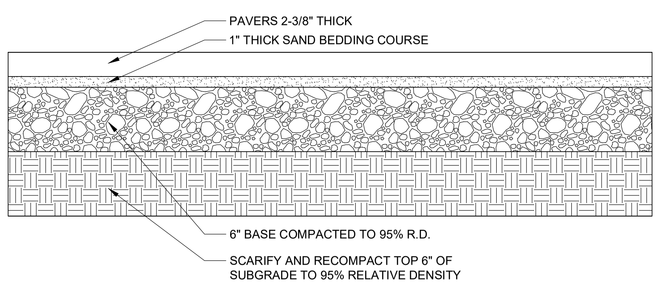


NOTE:
1. GALVANIZED TUBE STEEL FENCING. COLOR: STANDARD POWDER COATED BLACK.
2. ALL WELDS SHALL BE 1/8" FILLET AT HORIZ. TO POST WHERE NEEDED, AND GROUND SMOOTH ALL WELDS.
3. FIELD-VERIFY ALL DIMENSIONS AND SUBMIT SHOP DRAWINGS WITH ALL MATERIALS AND PARTS TO OWNER REPRESENTATIVE FOR REVIEW AND APPROVAL.
4. VERIFY POST AND FOOTING SIZES WITH MANUFACTURER'S SPECIFICATIONS AND WIND LOAD REQUIREMENTS.
5. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION
6. ALL FENCING TO BE POWDER COATED INDIGO BLUE OR BLACK, GET APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO PAINTING

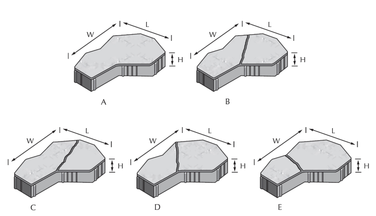
GATE HARDWARE SYSTEM NOTES:
1. GATE LATCH: TO HAVE LOCKING CAPABILITY
2. CONTRACTOR TO PROVIDE CUTSHEETS OF ALL HARDWARE FOR REVIEW AND APPROVAL BY OWNER REPRESENTATIVE PRIOR TO ORDERING AND INSTALLATION.
3. INSTALL ALL EQUIPMENT PER MANUFACTURER'S SPECIFICATION

8 L2.4 STEEL PICKET FENCE 4'H FLAT TOP AND PEDESTRIAN SWING GATE

NTS



PAVER SECTION



NOTES:
1. SOFT AND UNSUITABLE SUBGRADE MATERIAL SHALL BE OVER EXCAVATED & BACKFILLED WITH EQUIVALENT DEPTH OF AGGREGATE BASE OR STRUCTURAL FILL.
2. PAVER EDGING PER PLAN
3. SAND BEDDING COURSE TO BE SAKRETE LEVELING SAND OR APPROVED EQUAL
4. FILL PAVER JOINTS WITH SAKRETE PERMASAND POLYMERIC JOINTING SAND OR APPROVED EQUAL, INSTALL PER MANUFACTURER INSTRUCTIONS

CONTACT: JAMES MOTAREX - BASALITE (775) 745-1286

9 L2.4 ARTISAN FLAGSTONE PAVERS - BID ALTERNATE

MDG
MELTONDESIGNGROUP
820 BROADWAY ST.
CHICO, CA 95928
(530) 899-1616
meltondg.com

LICENSE

REGISTERED LANDSCAPE ARCHITECT
GREG MELTON #2121
EXP. 11-26
STATE OF CALIFORNIA

CONSULTANT

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

CONSTRUCTION DETAILS

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
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PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

SHEET NUMBER

L2.4

SHEET 19 OF 31

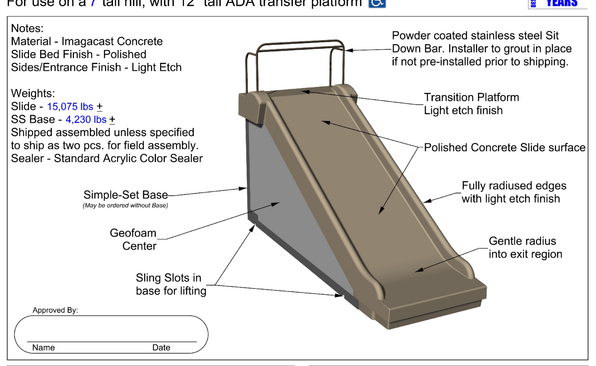
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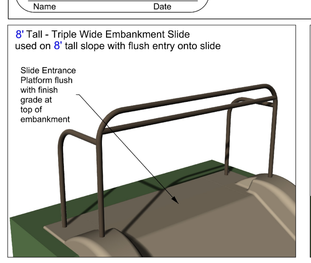
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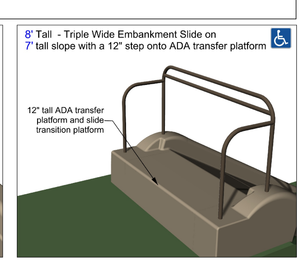
8' Triple Wide Embankment Slide **With Simple Set Base**

AGES 5-12 YEARS

For use on a 8' tall hill, with flush slide entrance
For use on a 7' tall hill, with 12" tall ADA transfer platform



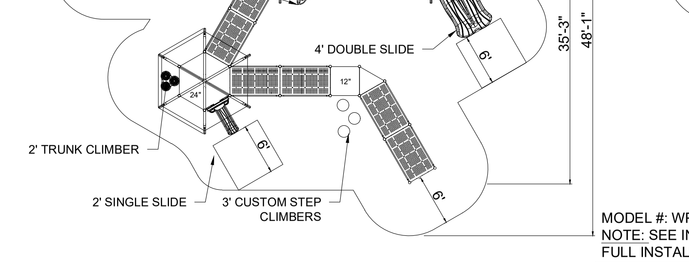


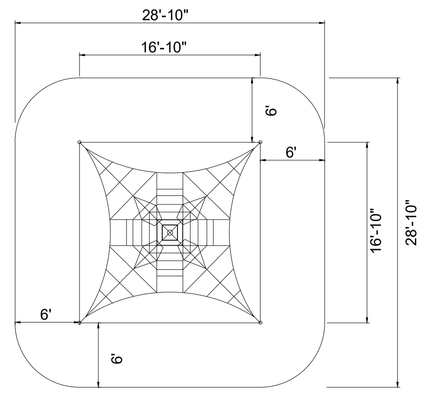


8' Triple Wide Embankment Slide **With Simple Set Base**

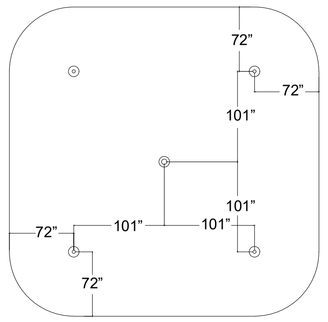
AGES 5-12 YEARS

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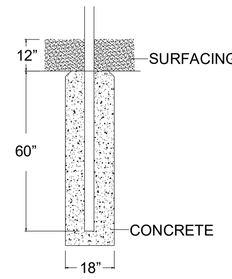


PLAN VIEW



FOOTING DIAGRAM

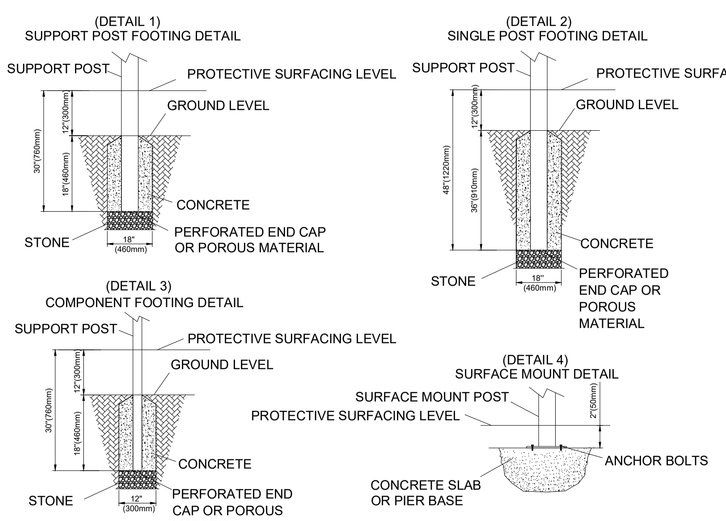
NOTE:
PRE PURCHASED ITEM. BY OWNER
PURCHASE, INSTALLED BY CONTRACTOR



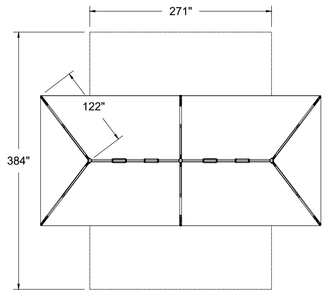
POST IN GROUND MOUNTING

MODEL #: 74-21033
NOTE: SEE FULL INSTALLATION MANUAL FOR FULL INSTALLATION INSTRUCTIONS
COLOR: BLUE METAL, BLUE ROPE

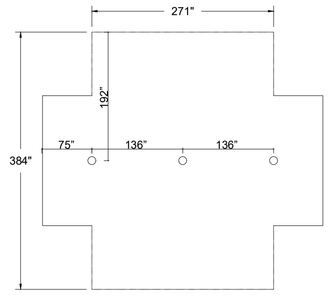
2 L2.5 RAMESSES ROPE CLIMBER - WISDOM PLAYGROUNDS



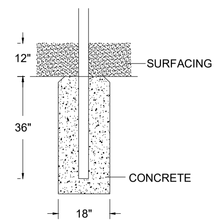
INSTALLATION NOTES:
(1) PAVED SURFACES SUCH AS ASPHALT AND CONCRETE,ARE NOT ACCEPTABLE FOR USE UNDER YOUR STRUCTURE.
(2) IT IS THE CONSUMER'S RESPONSIBILITY TO CHECK WITH LOCAL UTILITIES PRIOR TO EXCAVATING FOOTINGS FOR ANY UNDERGROUND UTILITY LINES THAT MAY EXIST WITHIN THE INSTALLATION AREA.
(3) IT IS THE CONSUMER'S RESPONSIBILITY TO CHECK LOCAL SOIL CONDITIONS AND DRAINAGE WITHIN THE SITE AREA. INQUIRE WITH LOCAL CONTRACTORS FOR APPROPRIATE RECOMMENDATLONS.
(4) IF THE STRUCTURE IS TO BE INSTALLED ACROSS UNEVEN TERRAIN, MAINTALN THE SUPPORT POST MARK FOR PROTECTIVE SURFACING LEVEL AT THE LOWEST GRADE. ADJUST OTHER FOOTINGS ACCORDINGLY.
(5) THE BASE OF FOOTINGS MUST BE BELOW FROST LINES.
(6) DO NOT ENCASE THE BOTTOM OF SUPPORT POSTS IN CONCRETE. PLACE ALL POSTS DIRECTLY ON PACKED STONE.
(7) ASSEMBLE THE ENTIRE STRUCTURE BEFORE POURING CONCRETE UNLESS SPECIFICALLY INSTRUCTED TO DO SO IN THE INDIVIDUAL COMPONENT INSTALLATION INSTRUCTIONS.
(8) READ COMPLETELY THE INSTALLATION INSTRUCTIONS PROVIDED WITH YOUR STRUCTURE PRIOR TO BEGINNING CONSTRUCTION



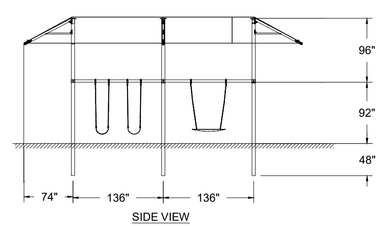
PLAN VIEW



FOOTING DIAGRAM



POST IN GROUND MOUNTING

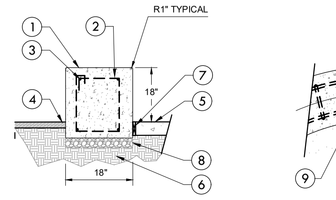


SIDE VIEW

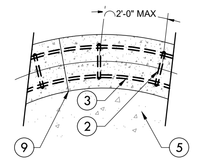
MODEL #: SPS-0802-2BE2BU-SF-110
NOTE: SEE INSTALLATION MANUAL FOR FULL INSTALLATION INSTRUCTIONS
COLOR: BLUE METAL, ROYAL BLUE FABIRC

NOTE:
PRE PURCHASED BY OWNER. BY OWNER PURCHASE, INSTALLED BY CONTRACTOR

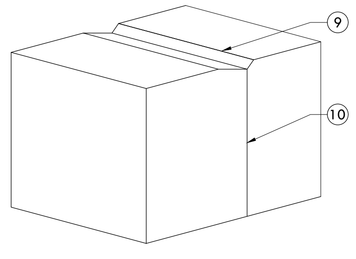
3 L2.5 CUSTOM SINGLE-POST SWINGS WITH SAUCER SEAT AND SHADE - WISDOM PLAYGROUNDS



(A) CIRCULAR WALL SECTION



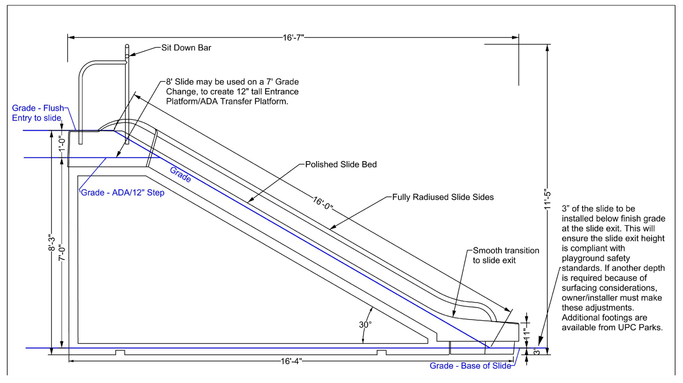
(A-1) TYPICAL WALL PLAN VIEW



1. CONCRETE WALL. COLOR PER PLAN. SMOOTH FORM FINISH, STEEL TROWEL TOP OF WALL, EDGES RADIUS 1". SEAL WITH CONCRETE SEALER.
2. #4 REBAR STIRRUPS AT 24" O.C.
3. #4 REBAR CONTINUOUS (TYPICAL)
4. LANDSCAPE FINISH GRADE PER PLAN.
5. ADJACENT SURFACE PER PLAN
6. SUBGRADE. COMPACT TO 95% RELATIVE DENSITY.
7. EXPANSION JOINT
8. 6" OF CLASS II BASE 95% COMPACTION
9. SAWCUT SCORELINE @ 6' O.C. OR EQUAL SPACING, ¼" WIDE X 1-1/2" DEEP. GRIND EDGES OF SCORE LINE TO CREATE 45 DEGREE BEVELED EDGE
10. SCORELINE, @ 6' OC. OR EQUAL SPACING TO MATCH SAWCUT SCORELINE, 1-1/2" DEEP. EXPANSION JOINT EVERY 12'.

NOTES:

A. CONTRACTOR TO PROVIDE SMOOTH FORM FINISH WITHOUT AIR BUBBLES
B. USE 1 / 2" RADIUS ROUNDED TOOL EDGE FOR SCORING
C. LIGHT ACID WASH FINISH
D. EXPANSION JOINTS TO BE INSTALLED AROUND BASE OF SEATWALLS IN HARDSCAPE AS SPECIFIED IN CALLOUT 7 THIS DETAIL

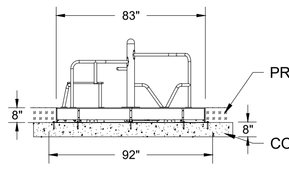


COLORS:
- CONCRETE COLOR FIESTA
- SIT DOWN BAR COLOR CHOCOLATE

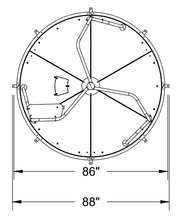
NOTE:
PRE PURCHASED ITEM. BY OWNER PURCHASED, INSTALLED BY CONTRACTOR.

1 L2.5 EMBANKMENT SLIDE 8' TRIPLE WIDE - UPC

4 L2.5 TYPICAL FOOTING TYPES FOR WISDOM PLAY ELEMENTS - WISDOM PLAYGROUNDS



SIDE VIEW

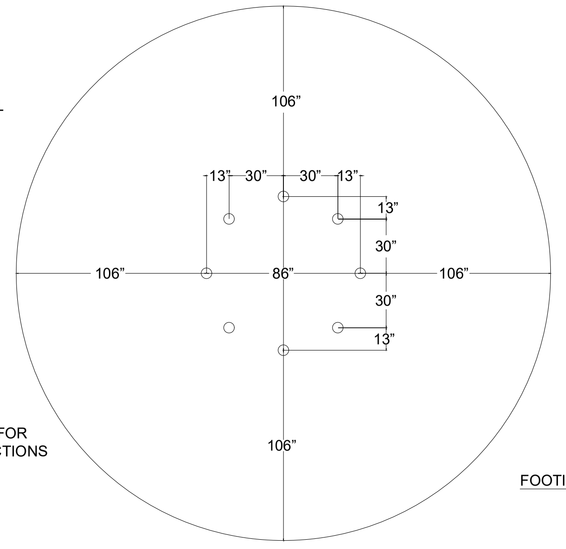


PLAN VIEW

NOTE:
PRE-PURCHASED BY OWNER. BY OWNER PURCHASE, INSTALLED BY CONTRACTOR

COLOR: BLUE AND LIME

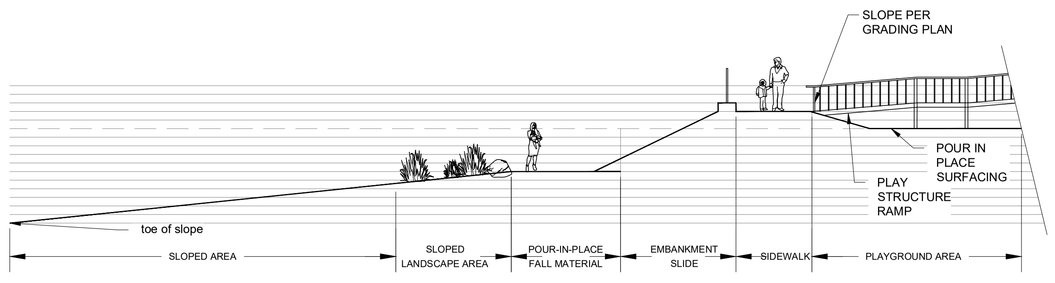
MODEL #: 75-21039
NOTES:
1. SEE INSTALLATION MANUAL FOR FULL INSTALLATION INSTRUCTIONS



FOOTING DIAGRAM

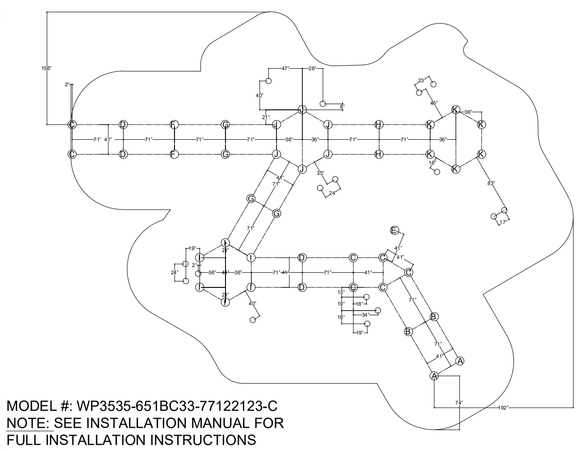
5 L2.5 CAST-IN-PLACE CONCRETE SEATWALL - STANDARD CURVED

N.T.S.



6 L2.5 ACCESSIBLE TWIRL A WHIRL SPINNER - WISDOM PLAYGROUNDS

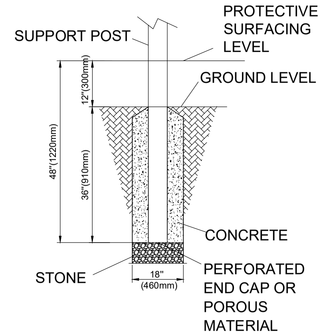
7 L2.5 SECTION AT PLAY EQUIPMENT AND SLIDE (ILLUSTRATIVE PURPOSES ONLY)



MODEL #: WP3535-651BC33-77122123-C
NOTE: SEE INSTALLATION MANUAL FOR FULL INSTALLATION INSTRUCTIONS
COLORS: BLUE AND LIME PLASTIC AND METAL, ROYAL BLUE FABRIC

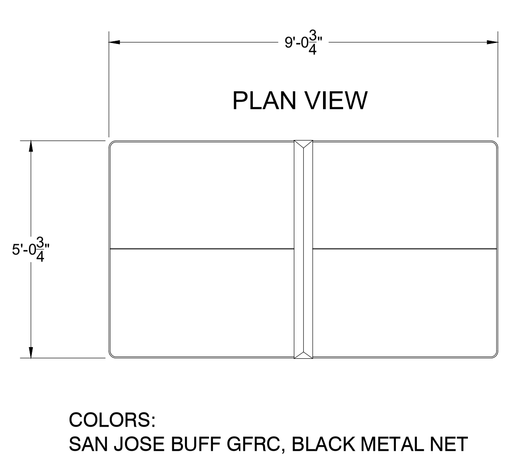
FOOTING IS A DEFERRED ITEM, TYPICAL SHOWN IS FOR BID PURPOSES ONLY

SINGLE POST FOOTING DETAIL

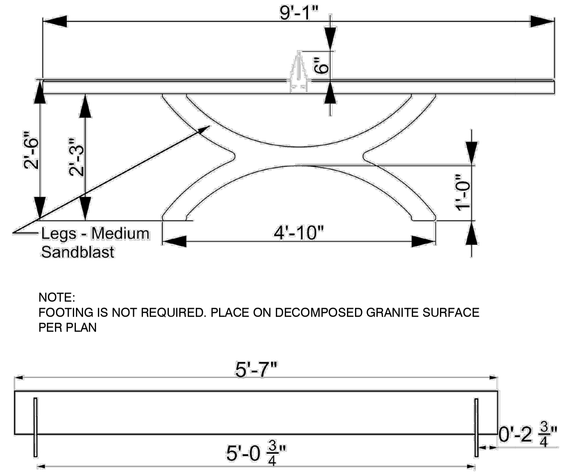


NOTE:
PRE PURCHASED BY OWNER. BY OWNER PURCHASED, INSTALLED BY CONTRACTOR

8 L2.5 HMONG CUSTOM PLAYGROUND STRUCTURE - WISDOM PLAYGROUNDS



COLORS:
SAN JOSE BUFF GFRC, BLACK METAL NET

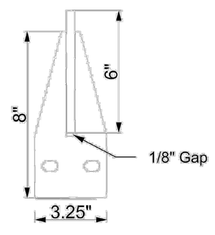


NOTE:
FOOTING IS NOT REQUIRED. PLACE ON DECOMPOSED GRANITE SURFACE PER PLAN

NOTE:
OWNER PURCHASED, CONTRACTOR INSTALLED

9 L2.5 CONCRETE PING PONG TABLE - UPC

Material: ImagaCrete 4,000 PSI
Finish: Acid Etch
Air Entrained: Yes
Sealer: Standard
Rebar: A706, #3 & #4
Lifting: 2 Forks under table



Net Material 3/8" X6" Flat Bar
Powder Coated Black
Custom powder coat colors, text and logos can be added at an additional charge.

MDG
MELTONDESIGNGROUP
820 BROADWAY ST.
CHICO, CA 95928
(530) 899-1616
meltondg.com

LICENSE

REGISTERED LANDSCAPE ARCHITECT GREG MELTON #2121 EXP. 11-26 STATE OF CALIFORNIA

CONSULTANT

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

CONSTRUCTION DETAILS

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
4.		
5.		
6.		
7.		
8.		

PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

SHEET NUMBER

L2.5

SHEET 20 OF 31

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PLOT DATE: February 26, 2026 - 7:13 PM
FILE NAME: G:\WDG\2600-2699\2615 General Vang Pao Park, MP and Playground\2615 CAD\CDs\SHEETS\2615-L12.2-CONS-DETS.dwg
Page 46 of 412

Parts List:

ITEM NO.	DESCRIPTION	QTY.
1	Contrabass Chimes - Surface Mount Chime Assembly 1	1
2	Contrabass Chimes - Surface Mount Chime Assembly 2	1
3	Contrabass Chimes - Surface Mount Chime Assembly 3	1
4	Contrabass Chimes - Surface Mount Chime Assembly 4	1
5	Contrabass Chimes - Surface Mount Chime Assembly 5	1
6	Contrabass Chimes - Surface Mount Chime Assembly 6	1
7	Contrabass Chimes - Surface Mount Chime Assembly 7	1
8	Contrabass Chimes - Surface Mount Mallet Pole, 48" SL	7
9	3/8"-16 Wedge Expansion Anchor, 3.75"LG. SS	29
10	35/64" Hex Nut Cap	29

Step 1: Determine your layout. Spacing between Chimes and Mallet Poles must be maintained per the diagram shown to allow the Mallets to reach each Chime. Although the Chimes can be laid out in a variety of styles such as an arc, wave, or straight-line; we suggest one of the following layouts:

#6, #4, Mallet Pole, #2, #1, #3, Mallet Pole, #5, #7

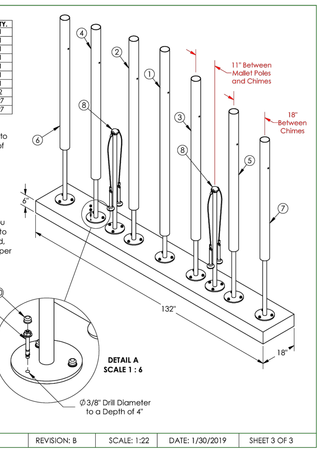
or

#1, #2, Mallet Pole, #3, #4, #5, Mallet Pole, #6, #7

Step 2: Determine Installation location. Verify concrete footing is a minimum of 132" long x 18" wide x 6" thick, depending on the layout you go with. If the concrete pad is at an angle, steel washers are required to act as shims (Shims not provided). If there is not already an existing pad, approximately (23) 80lb. bags will be needed. Allow concrete to cure per concrete manufacturers guidelines.

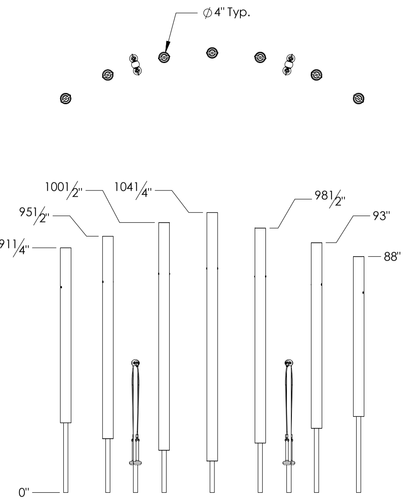
Step 3: With two people place the Chimes and Mallet Poles individually onto the concrete pad and mark the center of the holes on the surface mount plates. After you have made your marks, set aside the Chimes and Mallet poles in order to drill for anchor holes. With a hammer or rotary drill, drill through concrete at marked locations. Drill to a minimum depth of 4". A 3/8" masonry drill bit will be needed.

Step 4: Place the Chimes and Mallet Poles back over the drilled out holes. Insert provided anchor bolts into aligned holes. Position anchor nut so that it is flush with the top of the bolt. Pound anchor bolts into the hole until the anchor washer is flush with the surface mount base. Tighten anchor bolts until they are snug. Cover remaining bolt sections with provided nut caps.



DWG. NO.: CCH-INSTALL | REVISION: B | SCALE: 1:22 | DATE: 1/30/2019 | SHEET 3 OF 3

NOTE:
PRE PURCHASED BY OWNER. BY OWNER PURCHASE, INSTALLED BY CONTRACTOR

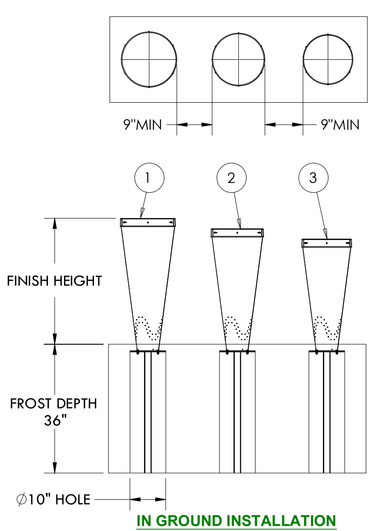


STEP 1: ASSEMBLE DRUMS AFTER APPLYING A FEW DROPS OF THREAD-LOCKING FLUID TO THE ENDS OF THE BOLT THREADS, USE THE 3/8" HEX HEAD BOLTS AND 3/8" HEX NUTS TO SECURE THE POST EXTENSIONS TO EACH DRUM.

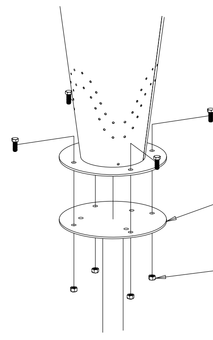
STEP 2: DIG HOLES. AFTER CHOOSING YOUR LAYOUT, EXCAVATE (3) 10" DIA HOLES 34" DEEP AT THE MARKED LOCATIONS (1 HOLE PER DRUM).

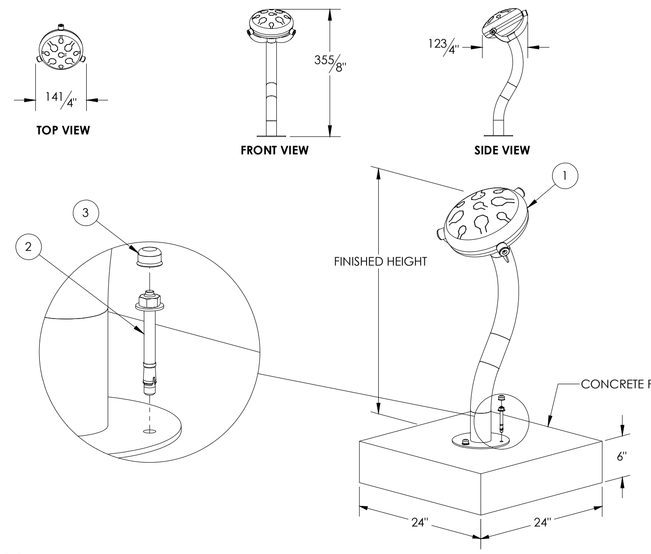
STEP 3: PLACE DRUMS WITH TWO PEOPLE, PLACE EACH DRUM INTO ITS HOLE AND VERIFY THE FINISH HEIGHT OF EACH DRUM. ADJUST THE HOLE DEPTH IF NECESSARY TO ACHIEVE THE PROPER FINISH HEIGHT.

STEP 4: POUR CONCRETE AROUND THE POST EXTENSION WITHIN THE HOLE AND CHECK THAT THE DRUMS ARE LEVEL. LEAVE CONCRETE TO SET ACCORDING TO THE CONCRETE MANUFACTURER'S RECOMMENDATIONS. IF NECESSARY, BRACE EACH DRUM TO HOLD IT LEVEL DURING THE CURING PROCESS. APPROXIMATELY (9) 80 LB BAGS OF CONCRETE WILL BE NEEDED FOR A FULL SET, (3) BAGS PER DRUM.



IN GROUND INSTALLATION



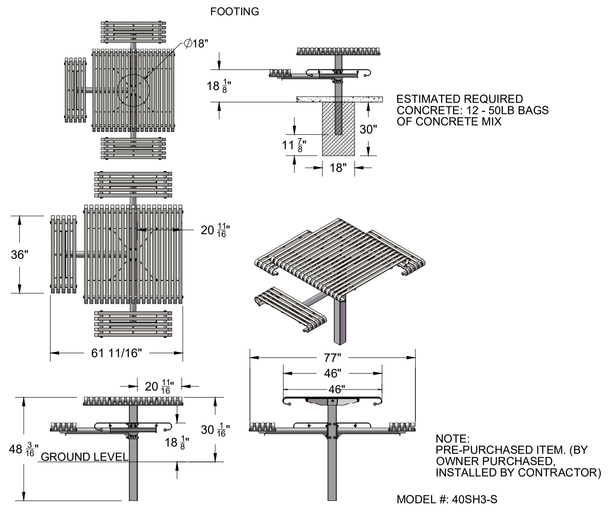


SURFACE MOUNT INSTALLATION INSTRUCTIONS

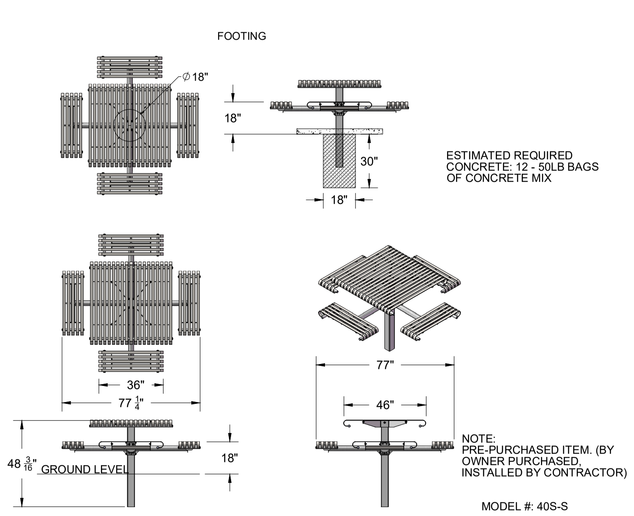
1. STANDARD FINISHED HEIGHT FOR T HE SURFACE MOUNTED CALYPSO IS 35.5". (RECESSING THE CONCRETE PAD BELOW THE FINISHED SURFACING WILL BE REQUIRED IF DESIRED AGE GROUPS ARE BETWEEN 2-12) BE SURE TO ACCOUNT FOR SURFACING THICKNESS IF IT IS TO BE USED.
2. ***FINISHED HEIGHT GUIDELINE: (AGES 2-5, 27.5") (AGES 5-12, 31.5") (AGES 13+, 35.5")*** *DETERMINE INSTALLATION LOCATION. VERIFY CONCRETE PAD IS A MINIMUM OF 24" LONG X 24" WIDE X 6" THICK. IF THE CONCRETE PAD IS AT AN ANGLE, STEEL WASHERS ARE REQUIRED TO ACT AS SHIMS (SHIMS NOT PROVIDED). IF THERE IS NOT ALREADY AN EXISTING PAD, APPROXIMATELY (4) 80LB. BAGS WILL BE NEEDED. ALLOW CONCRETE TO CURE PER CONCRETE MANUFACTURERS GUIDELINES.*
3. *WITH TWO PEOPLE PLACE THE INSTRUMENT ASSEMBLY ONTO THE CONCRETE PAD AND MARK THE CENTER OF THE HOLES ON THE SURFACE MOUNT BASE. AFTER YOU HAVE MADE YOUR MARKS, SET ASIDE THE INSTRUMENT IN ORDER TO DRILL FOR ANCHOR HOLES. WITH A HAMMER OR ROTARY DRILL, DRILL THROUGH CONCRETE AT MARKED LOCATIONS. DRILL TO A MINIMUM DEPTH OF 4". A 3/8" MASONRY DRILL BIT WILL BE NEEDED.*
4. *PLACE THE INSTRUMENT BACK OVER THE DRILLED OUT HOLES. INSERT PROVIDED ANCHOR BOLTS INTO ALIGNED HOLES. POSITION ANCHOR NUT SO THAT IT IS FLUSH WITH THE TOP OF THE BOLT. POUND ANCHOR BOLTS INTO THE HOLE UNTIL THE ANCHOR WASHER IS FLUSH WITH THE SURFACE MOUNT BASE. TIGHTEN ANCHOR BOLTS UNTIL THEY ARE SNUG. COVER REMAINING BOLT SECTIONS WITH PROVIDED NUT CAPS.*
5. *VERIFY THE CORRECT PLACEMENT, LEVELNESS, AND FINISHED HEIGHT OF THE INSTRUMENT. CHECK FOR SUFFICIENT CLEARANCE AROUND THE INSTRUMENT. A 36" PERIMETER AROUND THE INSTRUMENT IS RECOMMENDED FOR WHEELCHAIR ACCESSIBILITY.*
6. *IF INSTALLING ONTO WET CONCRETE, US THE WET SET ANCHOR MANUFACTURERS GUIDELINES FOR INSTALLATION PROCEDURES.*

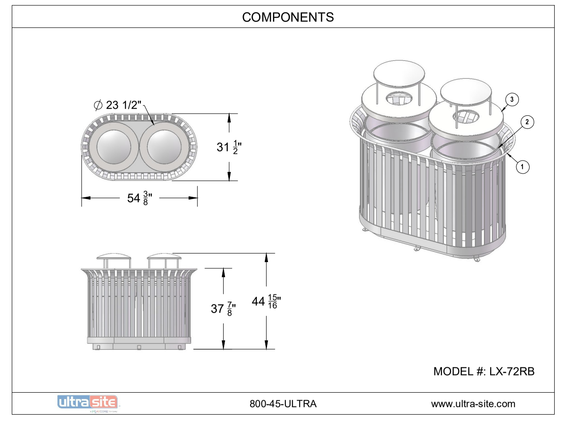
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	CPSO-G-BOM	PRE-ASSEMBLY - CALYPSO INSTRUMENT (GREEN POST)	1
2	POW 07315	3/8"-16 WEDGE EXPANSION ANCHOR, 3.75"LG. SS	3
3	9267K43	35/64" HEX NUT CAP	3

2 L2.6 BOSSA NOVA DRUMS - FREENOTES HARMONY PARK - BID ALTERNATE



3 L2.6 CALYPSO DRUM - FREENOTES HARMONY PARK - BID ALTERNATE





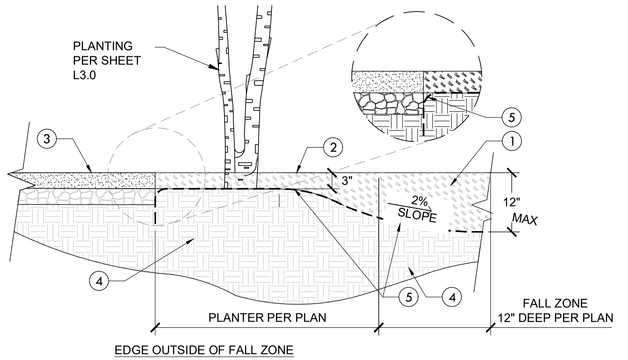
NOTE:
PRE PURCHASED BY OWNER. BY OWNER PURCHASE, INSTALLED BY CONTRACTOR

ITEM NO.	PARTNO	DESCRIPTION	QTY
1	LX-72	LX-72 TRASH RECEPTACLE	1
2	PL-32	32 GAL. LINER	2
3	RB-32	32 GAL. RAIN BONNET	2

NOTES FOR DETAIL:

1. CONTRACTOR TO PROVIDE ANCHOR SUBMITTAL PRIOR TO CONSTRUCTION
2. INSTALL PER MANUFACTURER'S RECOMMENDATIONS

1 L2.6 CONTRABASS CHIMES - FREENOTES HARMONY PARK



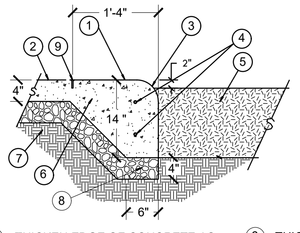
EDGE OUTSIDE OF FALL ZONE

NOTES:

1. ENGINEERED WOOD FIBER MUST COMPLY WITH ASTM F1951.
2. FIBER MUST BE MAINTAINED/REPLENISHED REGULARLY TO ENSURE 11B-1008.2.6.1 COMPLIANCE.

1. PLAY EQUIPMENT FALL ZONE ENGINEERED WOOD FIBER. 12" DEEP MINIMUM AFTER COMPACTION. COMPACT IN 4" LIFTS. ORDER 125% OF REQUIRED VOLUME TO ALLOW FOR SETTLING
2. PLANTER AREA. ENGINEERED WOOD FIBER 3" DEEP, NO COMPACTION
3. ADJACENT SURFACING PER PLAN.
4. SUBGRADE. COMPACT TO 95% RELATIVE DENSITY.
5. TYPAR PROFESSIONAL LANDSCAPE FABRIC OR EQUAL. TUCK FABRIC 12" DOWN INTO SUBGRADE

4 L2.6 ACCESSIBLE PICNIC TABLE - ULTRA SITE

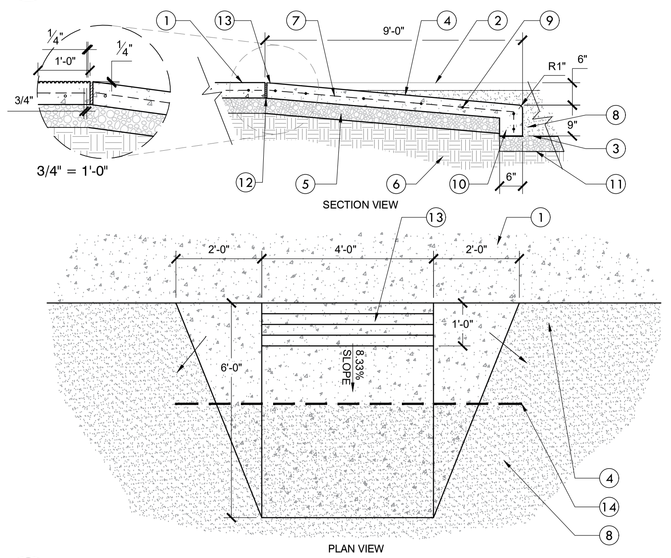


NOTES:

1. SEE GRADING PLAN FOR MAXIMUM DEPTH OF SAFETY FALL SURFACING

1. THICKEN EDGE OF CONCRETE AS SHOWN PER PLAN AND SPECIFICATIONS
2. CONCRETE PAVING PER PLAN AND SPECIFICATIONS
3. 4" RADIUS TOOLED EDGE
4. (2) #4 REBAR CONT.
5. SAFETY FALL SURFACING PER PLAN AND SPECIFICATIONS
6. THICKENED CONCRETE CURB
7. COMPACTED SUBGRADE TO 95%
8. 4" LAYER OF CLASS #2 AGGREGATE BASE COMPACTED TO 95% RELATIVE DENSITY.
9. SCORELINE - 1-1/2" DEPTH, 1/4" WIDTH WITH 1/4" RADIUS EDGE

5 L2.6 PICNIC TABLE - ULTRA SITE

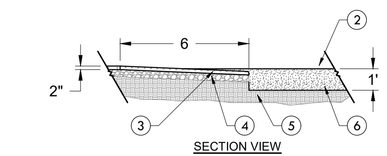


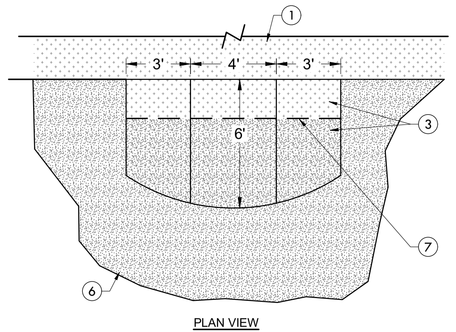
6 L2.6 TRASH AND RECYCLE RECEPTACLE - ULTRA SITE

1. CONCRETE PAVING PER PLAN
2. EDGE OF PLAY AREA
3. TYPAR PROFESSIONAL LANDSCAPE FABRIC OR EQUAL
4. INSTALL A MINIMUM OF 4" THICK CONCRETE RAMP WITH FLARED EDGE PER PLAN. RAMP TO COMPLY WITH ALL APPLICABLE ADA REQUIREMENTS. SLOPE NOT TO EXCEED 1:12 WITH 1:48 CROSS SLOPE.
5. 4" LAYER OF CLASS 2 AGGREGATE BASE COMPACTED TO 95% RELATIVE DENSITY.
6. SUBGRADE COMPACTED TO 95% RELATIVE DENSITY
7. #4 REBAR AT 18" IN BOTH DIRECTIONS
8. ENGINEERED WOOD FIBER OR EQUAL. 12" MIN COMPACTION SLUMP AT POSTS.
9. 1/2" X 12" STEEL DOWELS AT 24" O.C., TIE INTO ADJACENT (E) CONCRETE CURB AND SIDEWALK. REBAR EXTENDS THROUGH CURB.
10. REINFORCED EDGE - BUTT INTO ROLLED CURB. SLOPE SIDES OF RAMP TOWARDS SAND.
11. 4" LAYER OF 3/4" DRAIN ROCK. SLOPE TO DRAINS PER GRADING PLAN.
12. 1/4" EXPANSION JOINT WITH ELASTOMERIC SEALANT. COLOR TO MATCH ADJACENT CONCRETE.
13. 12" WIDE TACTILE WARNING BAND WITH GROOVES APPROX. 3/4" O.C. AND 1/4" WIDE AND DEEP.
14. ENGINEERED WOOD FIBER FILL LINE OVER CONCRETE RAMP

7 L2.6 ENGINEERED WOOD FIBER FALL MATERIAL

NTS



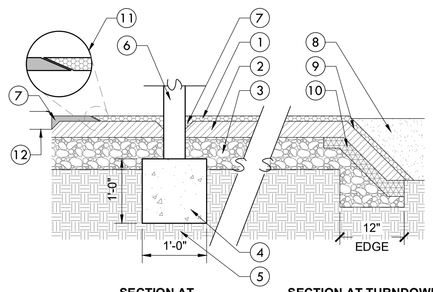


1. POUR-IN-PLACE RUBBER SURFACING, SEE DETAIL
2. EDGE OF PLAY AREA
3. INSTALL A MINIMUM OF 2" THICK POUR-IN-PLACE RUBBER SURFACED RAMP WITH TURNDOWN EDGE. SEE POUR-IN-PLACE RUBBER DETAIL. RAMP TO COMPLY WITH ALL APPLICABLE ADA REQUIREMENTS. SLOPE NOT TO EXCEED 1:12
4. 4" LAYER OF CLASS II AGGREGATE BASE COMPACTED TO 95% RELATIVE DENSITY
5. SUB-GRADE COMPACTED TO 95% RELATIVE DENSITY
6. ENGINEERED WOOD FIBER OR EQUAL. 12" MIN. COMPACTION SLUMP AT POSTS
7. ENGINEERED WOOD FIBER FILL LINE OVER POUR-IN-PLACE RAMP

8 L2.6 THICKENED EDGE OF CONCRETE AT EWF

NTS

1. POUR-IN-PLACE TPV - 1/2" MIN. THICKNESS (MATERIAL MAY VARY BASED ON REQUIREMENTS OF THE SPECIFIED SYSTEM)
2. SBR CUSHION LAYER (DEPTH VARIES BASED ON CRITICAL FALL HEIGHT REQUIREMENTS OF SELECTED MANUFACTURER)
3. SUB-BASE LAYER, SEE OPTIONS THIS DETAIL
4. CONCRETE FOOTING PER ELEMENT
5. COMPACTED NATIVE SOIL
6. PLAY ELEMENT FOOTING POST PER PLAN
7. 1-1/2" THICKENED EDGE OF POUR-IN-PLACE TPV
8. LOOSE FILL FALL MATERIAL PER PLAN
9. 45 DEG. EDGE, TYP.
10. SCRATCH 2" OF BASE ROCK AND POUR POWDERED CEMENT OVER 12" EDGE. WORK CONCRETE INTO BASE AND COMPACT
11. AT COLOR TRANSITIONS, OVERLAP WEAR COURSE LAYERS WITH HALF-LAP JOINT
12. CONCRETE OR BOULDER PER PLAN



SECTION AT POST LOCATIONS | **SECTION AT TURNDOWN TO LOOSE FILL**

SUB-BASE OPTIONS:

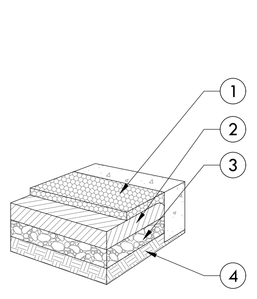
COMPACTED AGGREGATE: 4" MIN. THICKNESS OF TYPE II ROAD BASE COMPACTED TO 95% IN 2" WATERED LIFTS.

CONCRETE: 4" MIN. THICKNESS @ 2500 PSI MIN. MUST CURE FOR 7 DAYS* PRIOR TO INSTALLATION OF SAFETY SURFACING. (REQUIRES DRAINAGE DESIGN)

~~ASPHALT: 3" MIN. THICKNESS. MUST CURE A MIN. OF 14 DAYS* PRIOR TO INSTALLATION OF SAFETY SURFACING (REQUIRES DRAINAGE DESIGN)~~

*MUST CURE MIN. OF 28 DAYS FOR WEAR LAYER ONLY INSTALLATIONS

9 L2.6 PLAY AREA ACCESS RAMP - CONCRETE

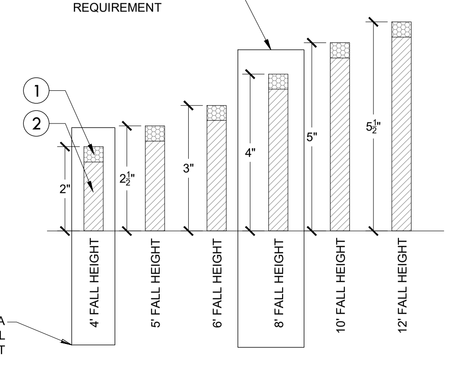


1. 1/2" TPV LAYER
2. SBR CUSHION LAYER
3. SUB-BASE LAYER
4. COMPACTED NATIVE SOIL

NOTE:
SBR CUSHION LAYER DEPTH VARIES PER MANUFACTURER AND SHALL BE DETERMINED PER MANUFACTURER'S REQUIREMENTS.

THIS CHART IS FOR BID PURPOSES ONLY

NOTE: SWING AREA HAS 8'H P.I.P. FALL HEIGHT REQUIREMENT



NOTE: MAIN PLAY AREA HAS 4'H P.I.P. FALL HEIGHT REQUIREMENT

10 L2.6 PLAY AREA ACCESS RAMP - POUR-IN-PLACE RUBBER

11 L2.6 POUR-IN-PLACE RUBBER SURFACE

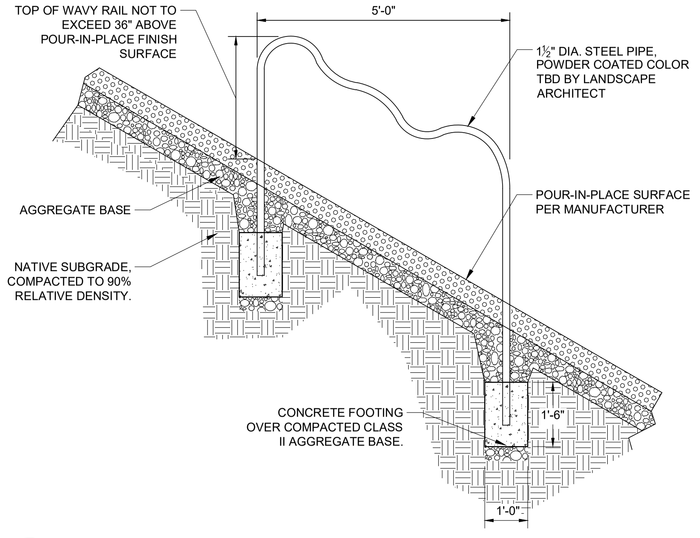
NTS

12 L2.6 POUR-IN-PLACE RUBBER SURFACING FALL HEIGHT CHART

NTS

13 L2.6 WAVY RAIL ON SLOPE - BID ALTERNATE

NTS



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(530) 899-1616
meltondg.com

LICENSE

REGISTERED LANDSCAPE ARCHITECT GREGG MELTON #2517 EXP. 11-26 STATE OF CALIFORNIA

CONSULTANT

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

CONSTRUCTION DETAILS

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
4.		
5.		
6.		
7.		
8.		

PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

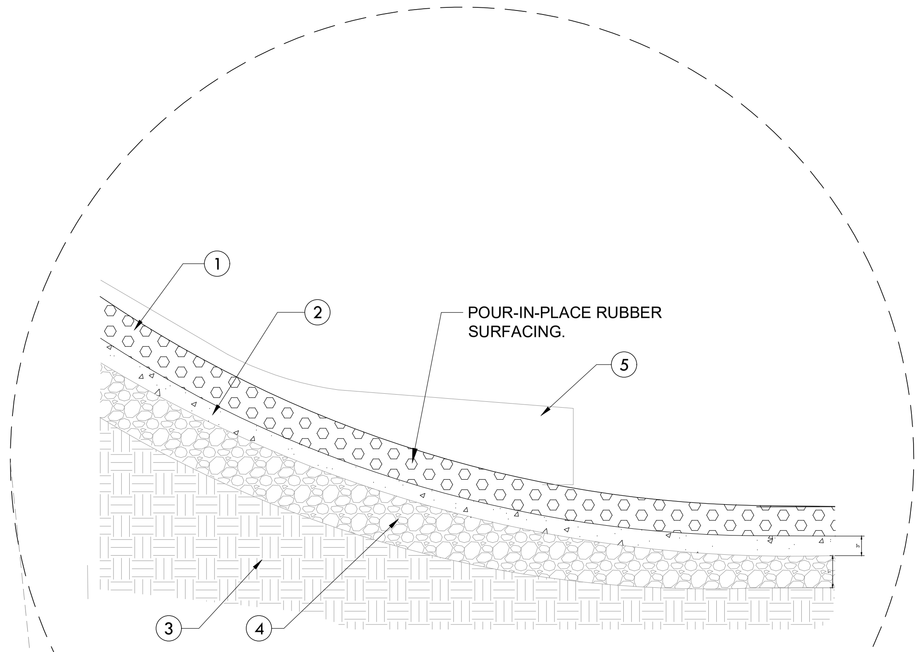
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L2.6

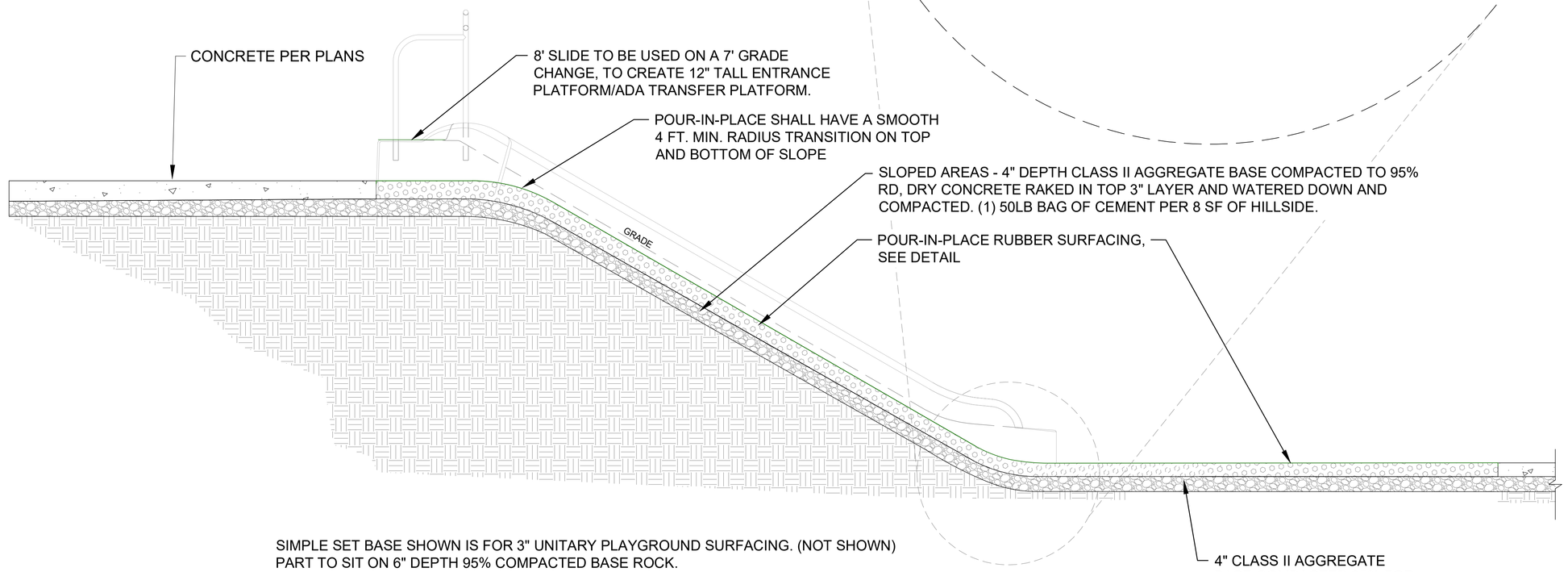
SHEET 21 OF 31

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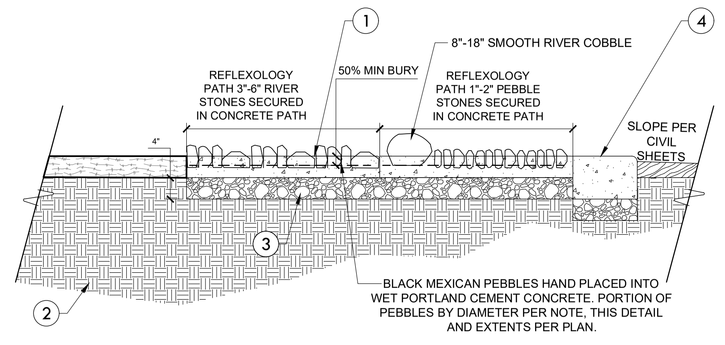
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FILE NAME: G:\MDG\2600-2699\2615 General Vang Pao Park AP and Playground\2615 CAD\CDs\SHEETS\2015-L2.2-CONS-DETS.dwg
Page 66 of 412



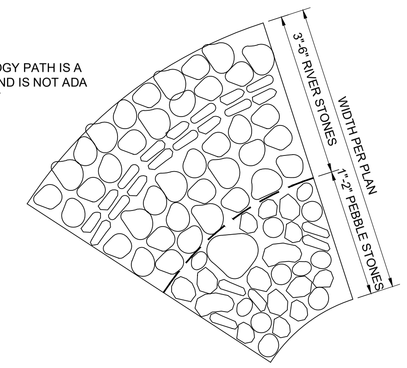
1. POUR-IN-PLACE (P.I.P) RUBBER SURFACING PER DETAIL
2. CEMENT-TREATED, TOP 3" LAYER OF BASE ROCK. DRY CEMENT POURED 50LB BAG PER 8SF AND RAKED IN. WATER SOAKED AND COMPACTED FOR FINISH GRADE.
3. EXISTING NATIVE SOIL COMPACTED TO 95%
4. 4" DEPTH CLASS II AGGREGATE - COMPACTED TO 95% AFTER TREATMENT
5. CONCRETE SLIDE - EXIT REGION



1 L2.7 POUR-IN-PLACE RUBBER ON HILL - SECTION 'C'
NTS



NOTE:
REFLEXOLOGY PATH IS A FEATURE AND IS NOT ADA COMPLIANT



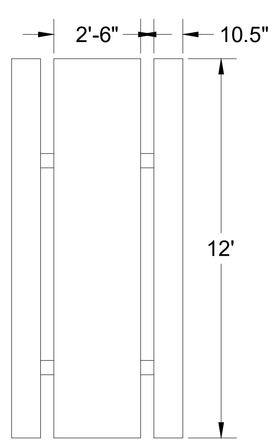
NOTIFY LANDSCAPE ARCHITECT
CONTRACTOR TO NOTIFY LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION TO CONFIRM STONE SUBMITTAL AND AID IN STONE LAYOUT DURING INSTALL. STONE LAYOUT IS CURVILINEAR WITH SMALLER STONES COVERING THE ENTIRETY OF THE PATH AND LARGER STONES PLACED STRATEGICALLY AMONGST THEM. CONCRETE SHALL BE INSTALLED IN MULTIPLE POURS AND COORDINATE WITH STONE LAYOUT

STONE TYPES (% IN SF)
1. WHITE STONES: 1" - 1-1/2" (10%)
2. BLACK MEXICAN PEBBLES: 1-1/2" - 2" (30%)
3. BAGGED RED POLISHED PEBBLES: 2" - 3" (15%)
4. PASKANTA FLAT COBBLE: 2" - 4" (10%)
5. NATURAL RIVER COBBLE: 3" - 6" (10%)

1. 4" THICK STANDARD GREY PORTLAND CEMENT CONCRETE, MIN 3,000 PSI. TO BE REINFORCED WITH 6" WELDED WIRE MESH, 9GA
2. 6" MIN DEPTH OF COMPACTED NATIVE SUBGRADE 90% R.D.
3. 4" CLASS II AGGREGATE BASE, COMPACTED TO 95% R.D. UNDER REFLEXOLOGY PATH.
4. ADJACENT PLAYGROUND CURB PER PLAN. INSTALL PER PLANS AND DETAILS. COLD JOINT BETWEEN PAVING AND ADJACENT CONCRETE AND CURB PER EXPANSION JOINT DETAIL

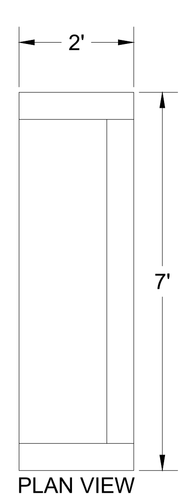
2 L2.7 (ALTERNATE) REFLEXOLOGY PATH DETAIL





3 L2.7 LIVE EDGE CUSTOM WOOD PICNIC TABLE - BID ALTERNATE





4 L2.7 LIVE EDGE CUSTOM WOOD BENCH - BID ALTERNATE

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CHICO, CA 95928
(530) 899-1616
meltondg.com

LICENSE

REGISTERED LANDSCAPE ARCHITECT
GREGG MELTON #6217
EXP. 11-26
STATE OF CALIFORNIA

CONSULTANT

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

CONSTRUCTION DETAILS - ALTERNATES

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
4.		
5.		
6.		
7.		
8.		

PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

SHEET NUMBER

L2.7

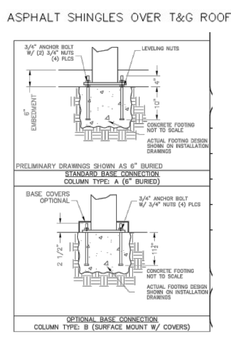
SHEET 22 OF 31

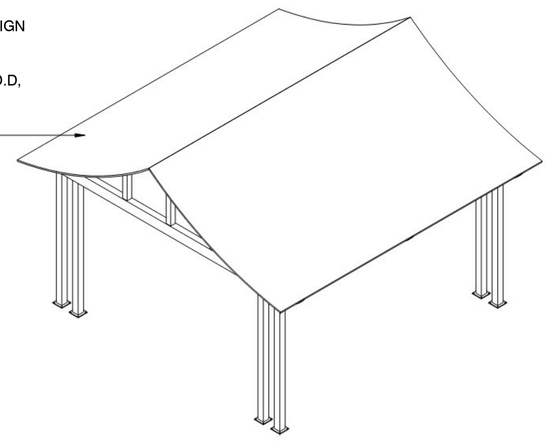
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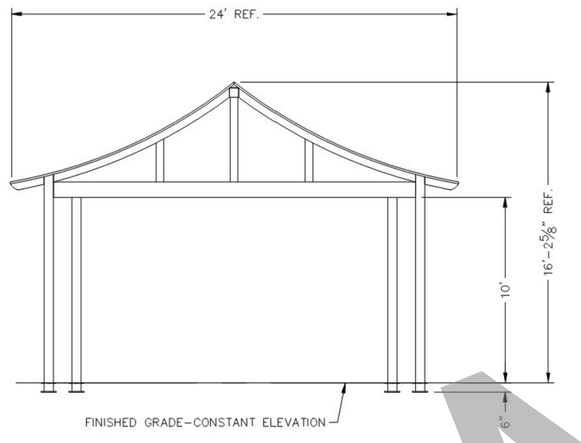
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PLOT DATE: February 26, 2026 - 7:13 PM

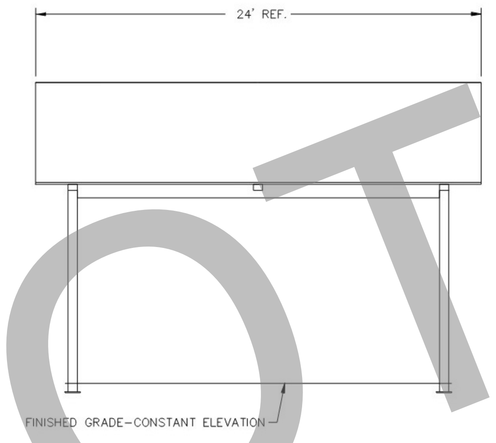
NOTE:
DOCUMENT NOT FOR CONSTRUCTION

- ENGINEERED DRAWINGS WITH FOOTING DESIGN WILL BE PROVIDED AFTER PURCHASE
- APPROXIMATE SIZE OF EACH FOOTING IS 3' O.D, X 4' DEEP

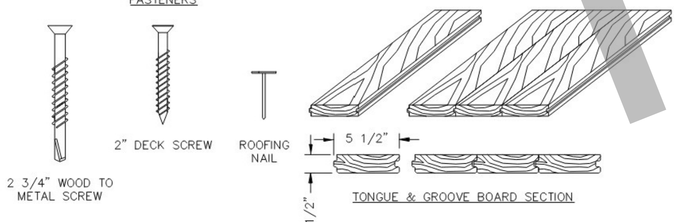




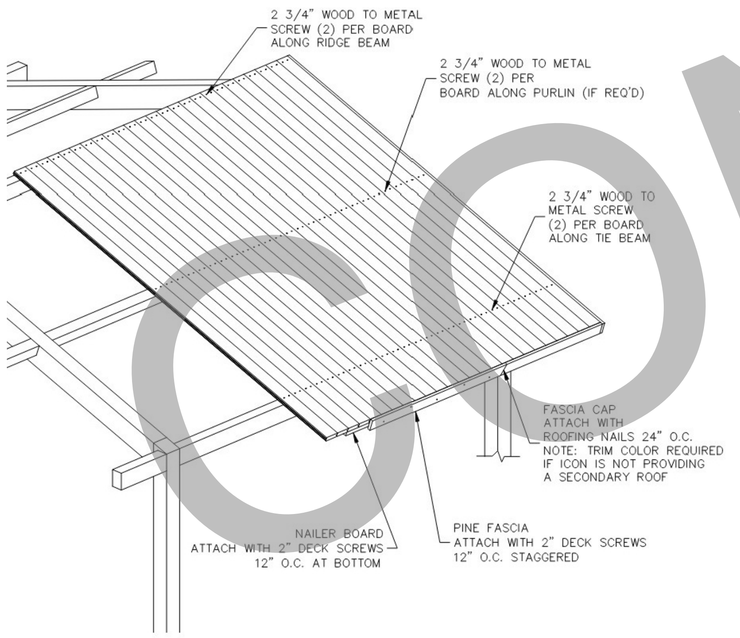


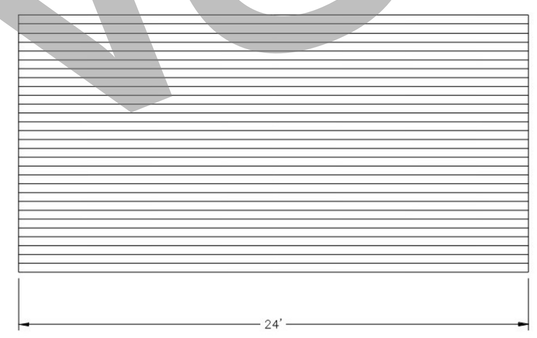


FASTENERS



NOTE: STANDARD DETAILS SHOWN ACTUAL BUILDING MAY VARY





ALTERNATE SHADE STRUCTURE

1 L2.8 STEEL SHADE STRUCTURE - BID ALTERNATE

PRELIMINARY: NOT FOR CONSTRUCTION

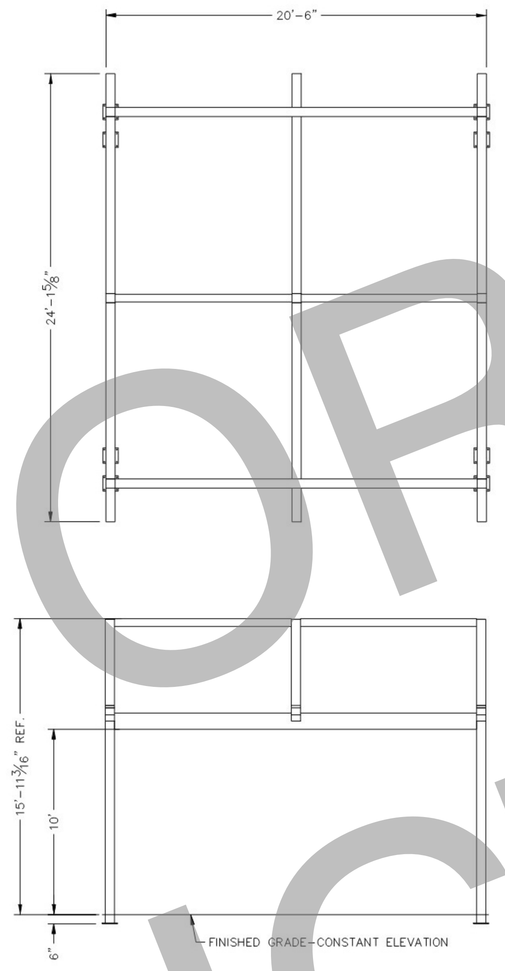
ICON Shelter Systems Inc
DISTINCTIVE STEEL SHELTERS
WWW.ICONSHELTERS.COM
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1455 LINCOLN AVE.
HOLLAND MI, 49423
616.396.0919
800.748.0985
616.396.0944 FX

Elevation

DRAWN BY: MH
DATE: 8/28/2025
PRELIMINARY ID: 103091
REVISION: A
BUILDING TYPE: RG24X24-10TA
PROJECT NAME:

SHEET 1.0

DWG:R:\G\24X24\TA-P6-20-90-79\Drawings\Preliminary\RG24x24-10TA-P6-20-90-79-103091.dwg



PRELIMINARY: NOT FOR CONSTRUCTION

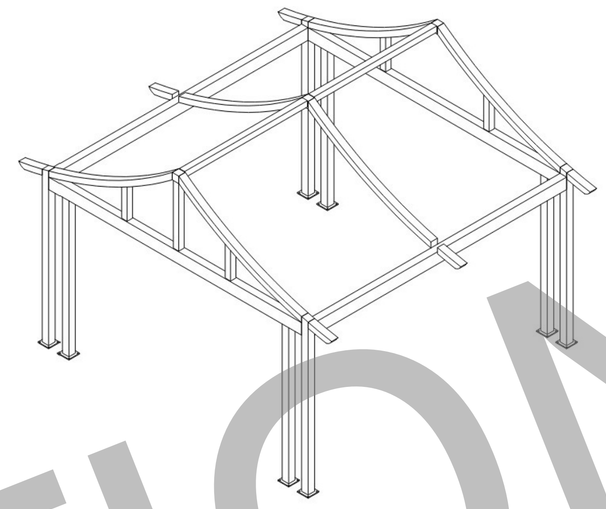
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Frame

DRAWN BY: MH
DATE: 8/28/2025
PRELIMINARY ID: 103091
REVISION: A
BUILDING TYPE: RG24X24-10TA
PROJECT NAME:

SHEET 3.0

DWG:R:\G\24X24\TA-P6-20-90-79\Drawings\Preliminary\RG24x24-10TA-P6-20-90-79-103091.dwg



ALL STRUCTURAL COMPONENTS WILL BE:
TUBE: ASTM A500 GRADE B
PLATE: ASTM A36
BOLTS: ASTM A325
NUTS: ASTM A563
WELDING: GMAW

NOTE:
COLUMN SIZE: HSS 6x6x3/16

PRELIMINARY: NOT FOR CONSTRUCTION

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Roof Layout

DRAWN BY: MH
DATE: 8/28/2025
PRELIMINARY ID: 103091
REVISION: A
BUILDING TYPE: RG24X24-10TA
PROJECT NAME:

SHEET 4.0

DWG:R:\G\24X24\TA-P6-20-90-79\Drawings\Preliminary\RG24x24-10TA-P6-20-90-79-103091.dwg

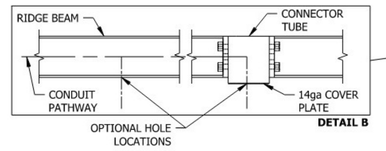
ELECTRICAL INFORMATION - RECTANGULAR GABLE

ICON'S STANDARD ELECTRICAL IS DESIGNED TO ACCOMMODATE Ø1/2" CONDUIT WITH A Ø3" INLET HOLE ON THE BOTTOM OF EACH COLUMN. THE CONDUIT PATHWAY RUNS THROUGH THE COLUMN, RAFTER, AND RIDGE BEAM THROUGH ALL BOLTED CONNECTIONS AS SHOWN. IF YOU HAVE SPECIAL ELECTRICAL REQUIREMENTS, PLEASE OUTLINE ANY CHANGES BELOW AS DESCRIBED.

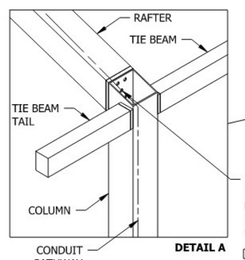
PLEASE NOTE: DESIGN LIMITATIONS ON HOLE/CUTOUT SIZES MAY APPLY. ICON WILL REACH OUT TO DISCUSS ANY SUCH LIMITATIONS AS NEEDED.

NOTE: ICON SHELTER FRAME IS NOT UL LISTED TO ACT AS A CONDUIT FOR ELECTRICAL WIRING. CONSULT LOCAL BUILDING CODES WHEN PLANNING YOUR ELECTRICAL SYSTEM.

OPTIONAL EXIT HOLES
IF REQUIRED, EXIT HOLES FOR LIGHTING, ETC. CAN BE PLACED IN THE RIDGE BEAM AND/OR CONNECTOR TUBE WITH 14ga COVER PLATE AS SHOWN (CHARGES APPLY)
USE FRAME SHEET OF THIS PRELIMINARY TO SPECIFY REQUIRED EXIT HOLE LOCATIONS AND SIZE.



DETAIL B



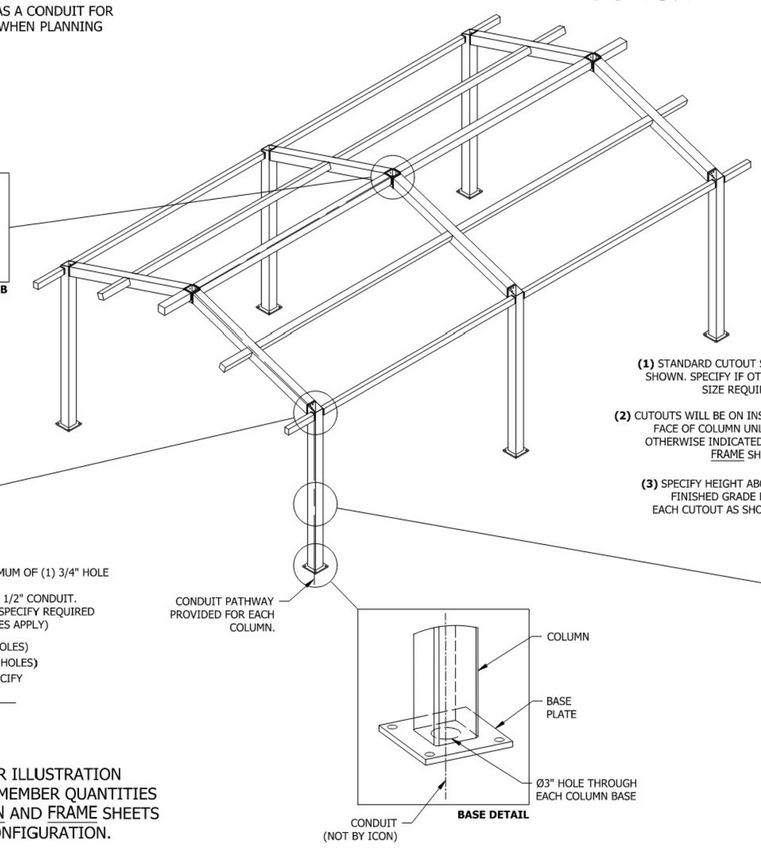
DETAIL A

ICON PROVIDES A MINIMUM OF (1) 3/4" HOLE AT EACH CONNECTION FOR 1/2" CONDUIT. IF APPLICABLE, PLEASE SPECIFY REQUIRED CONDUIT SIZE: (CHARGES APPLY)

- ☐ 3/4" CONDUIT (1" HOLES)
- ☐ 1" CONDUIT (1 1/4" HOLES)
- ☐ OTHER (PLEASE SPECIFY _____)

NOTE: BUILDING DEPICTED ON THIS SHEET FOR ILLUSTRATION PURPOSES ONLY. ACTUAL LAYOUT AND FRAME MEMBER QUANTITIES VARY BY DESIGN. PLEASE REFER TO ELEVATION AND FRAME SHEETS IN THIS PRELIMINARY FOR ORDER-SPECIFIC CONFIGURATION.

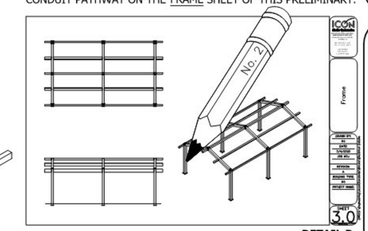
PRELIMINARY: NOT FOR CONSTRUCTION



BASE DETAIL

STEPS:
1. CONDUIT HOLE SIZE (DETAIL A)
2. ELECTRICAL EXIT HOLES (DETAIL B)
3. ELECTRICAL ACCESS & COVER PLATES (DETAIL C)
4. ELECTRICAL CONDUIT PATHWAY (DETAIL D)

IF REQUIRED, PLEASE DRAW THE NECESSARY ELECTRICAL CONDUIT PATHWAY ON THE FRAME SHEET OF THIS PRELIMINARY.



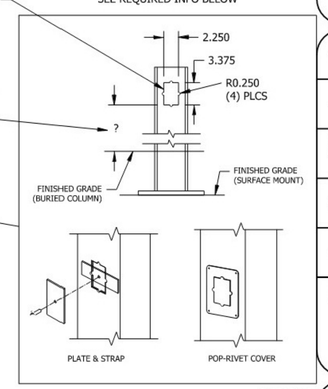
DETAIL D

OPTIONAL CUTOUTS
USE FRAME SHEET OF THIS PRELIMINARY TO SPECIFY REQUIRED CUTOUT LOCATIONS (CHARGES APPLY) SEE REQUIRED INFO BELOW

(1) STANDARD CUTOUT SIZE SHOWN. SPECIFY IF OTHER SIZE REQUIRED.

(2) CUTOUTS WILL BE ON INSIDE FACE OF COLUMN UNLESS OTHERWISE INDICATED ON FRAME SHEET.

(3) SPECIFY HEIGHT ABOVE FINISHED GRADE FOR EACH CUTOUT AS SHOWN



DETAIL C

(4) COVER PLATES PROVIDED UPON REQUEST (CHARGES APPLY)
PLEASE SPECIFY TYPE AND QUANTITY REQUIRED:

- ☐ PLATE & STRAP
- ☐ POP-RIVET COVER PLATE
  HOW MANY REQUIRED?_____

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HOLLAND MI, 49423
616.396.0919
800.748.0985
616.396.0944 FX

Electrical

DRAWN BY: MH
DATE: 8/28/2025
PRELIMINARY ID: 103091
REVISION: A
BUILDING TYPE: RG24X24-10TA
PROJECT NAME:

SHEET 5.0

DWG:R:\G\24X24\TA-P6-20-90-79\Drawings\Preliminary\RG24x24-10TA-P6-20-90-79-103091.dwg

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LICENSE

REGISTERED LANDSCAPE ARCHITECT
GREG MELTON #3211
EXP. 11-26
STATE OF CALIFORNIA

CONSULTANT

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG
PAO MEMORIAL
PARK - PHASE I

SHEET TITLE

CONSTRUCTION DETAILS - ALTERNATES

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
4.		
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PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

SHEET NUMBER

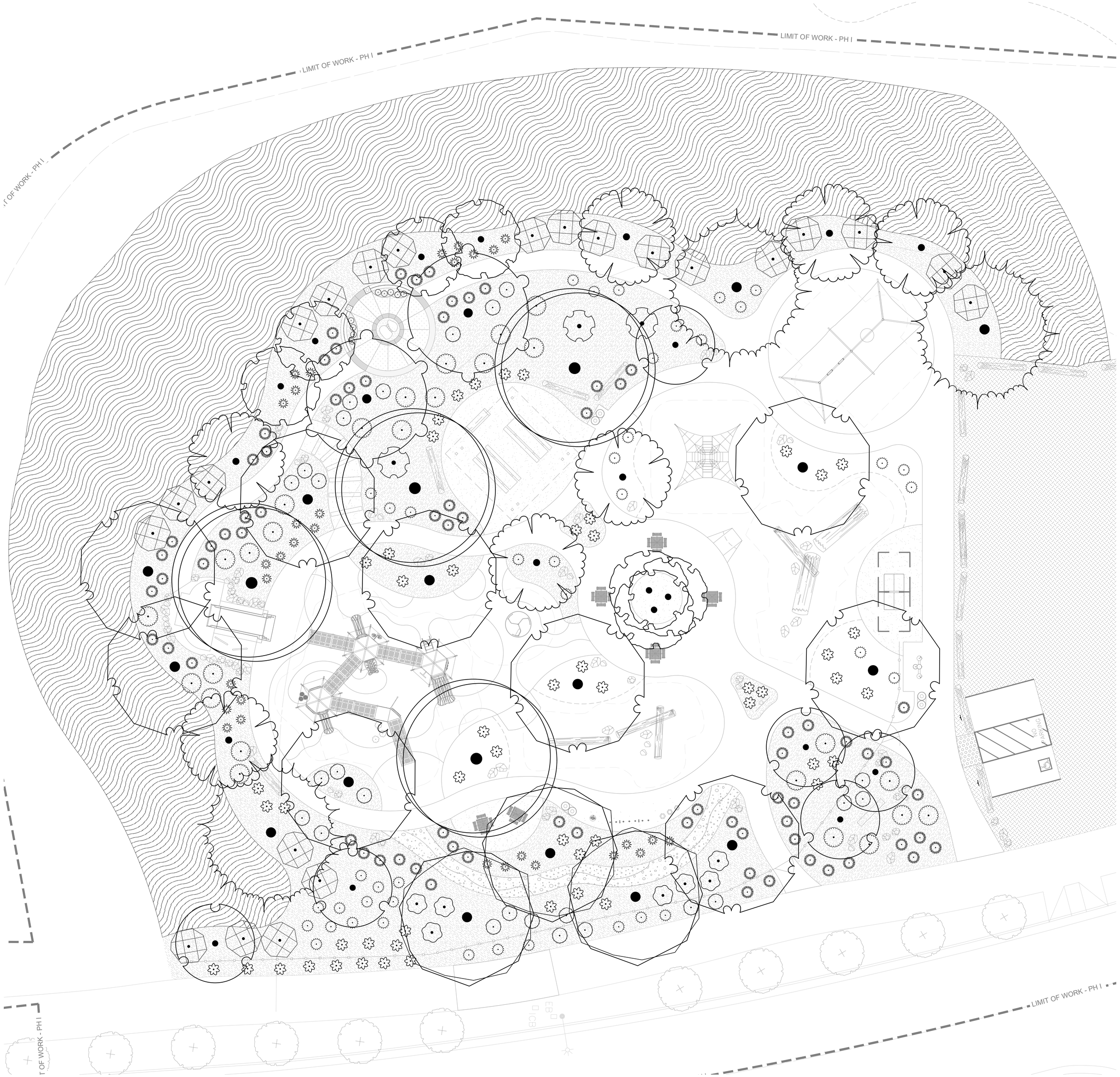
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SHEET 23 OF 31

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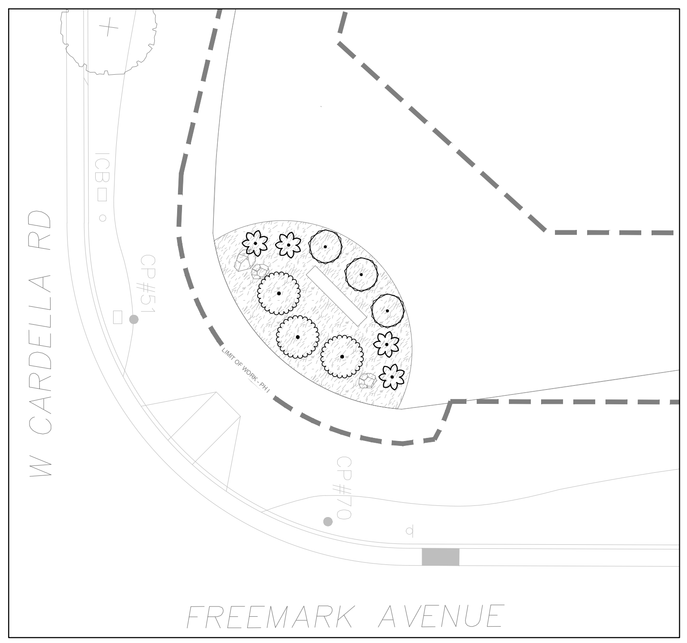
NOT FOR CONSTRUCTION

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PLOT DATE: February 26, 2026 - 7:13 PM
Page 44 of 112



PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL NAME	COMMON NAME	SIZE	WATER USE	QTY
TREES						
	AG	ACER GRISEUM	PAPERBARK MAPLE	15 GAL	MEDIUM	7
	AA2	ACER X FREEMANII `JEFFERSRED`	AUTUMN BLAZE® FREEMAN MAPLE	15 GAL	MEDIUM	9
	AM3	ARBUTUS X `MARINA`	MARINA STRAWBERRY TREE MULTI-TRUNK	15 GAL	LOW	6
	CD	CEDRUS DEODARA	DEODAR CEDAR	15 GAL	LOW	3
	CA	CEDRUS DEODARA `AUREA`	GOLDEN DEODAR CEDAR	15 GAL	LOW	2
	GB	GINKGO BILOBA 'AUTUMN GOLD'	MAIDENHAIR TREE	15 GAL	MEDIUM	7
	PC	PINUS CANARIENSIS	CANARY ISLAND PINE	15 GAL	LOW	3
	UP	ULMUS PARVIFOLIA	LACEBARK ELM	15 GAL	LOW	4
SHRUBS						
	AT	ARCTOSTAPHYLOS X 'HOWARD MCMINN'	HOWARD MCMINN MANZANITA	5 GAL	LOW	3
	BB	BOUTELOUA GRACILIS 'BLONDE AMBITION'	BLONDE AMBITION BLUE GRAMA	1 GAL	LOW	31
	CB	CAREX BARBARAE	VALLEY SEDGE	1 GAL	LOW	74
	CE	CAREX OSHIMENSIS 'EVERGOLD'	EVERGOLD JAPANESE SEDGE	1 GAL	LOW	9
	CT	CHONDROPETALUM TECTORUM 'EL CAMPO'	SMALL CAPE RUSH	1 GAL	LOW	28
	JP	JUNCUS PATENS 'ELK BLUE'	CALIFORNIA GRAY RUSH	1 GAL	LOW	57
	JB	JUNIPERUS HORIZONTALIS 'BLUE RUG'	BLUE RUG JUNIPER	1 GAL	LOW	29
	LL	LOMANDRA X `LOMLON`	LIME TUFF™ DWARF MAT RUSH	1 GAL	LOW	41
	MP	MYOPORUM PARVIFOLIUM	TRAILING MYOPORUM	1 GAL	LOW	22
	RC	RHAMNUS CALIFORNICA 'EVE CASE'	EVE CASE COFFEEBERRY	1 GAL	LOW	7
GROUND COVERS						
	TH	TURF HYDROSEED	DROUGHT TOLERANT FESCUE BLEND	SEED		15,877 SF



SOUTH ENTRANCE - PLANTING

LANDSCAPE DOCUMENTATION NOTES

1. UPON APPROVAL OF THE LANDSCAPE DOCUMENTATION PACKAGE, SUBMIT A COPY OF THE WATER EFFICIENT LANDSCAPE WORKSHEET TO THE LOCAL WATER PURVEYOR.

2. "I HAVE COMPLIED WITH THE CRITERIA OF THE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN AND IRRIGATION DESIGN PLANS."
SIGNED _____
PRINTED NAME:

3. UPON COMPLETION PROVIDE CERTIFICATION BY EITHER THE SIGNER OF THE LANDSCAPE DESIGN PLAN, THE SIGNER OF THE IRRIGATION DESIGN PLAN, OR THE LICENSED LANDSCAPE CONTRACTOR THAT THE LANDSCAPE PROJECT HAS BEEN INSTALLED PER THE APPROVED LANDSCAPE DOCUMENTATION PACKAGE.

NORTH

0 10 20
SCALE: 1" = 10'
@30x42

811 Know what's BELOW CALL before you dig.

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LICENSE

REGISTERED LANDSCAPE ARCHITECT
GREG MELTON #2121
EXP. 11-26
STATE OF CALIFORNIA

CONSULTANT

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

PLANTING PLAN

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
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PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

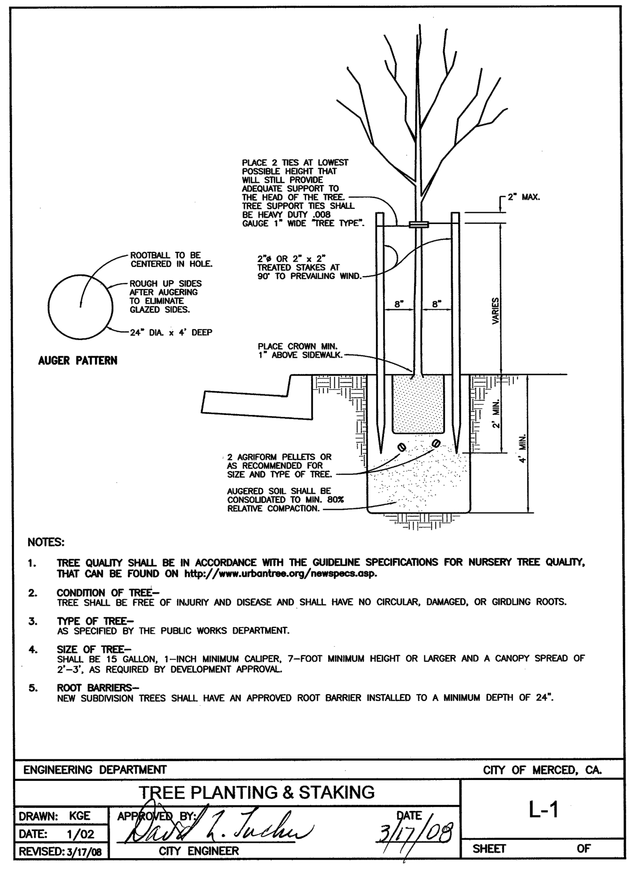
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Page 68 of 412

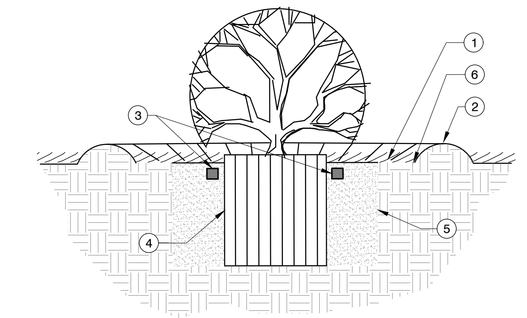


NOTES:

1. TREE QUALITY SHALL BE IN ACCORDANCE WITH THE GUIDELINE SPECIFICATIONS FOR NURSERY TREE QUALITY, THAT CAN BE FOUND ON http://www.urbantree.org/newspecs.asp.
2. CONDITION OF TREE--
   TREE SHALL BE FREE OF INJURY AND DISEASE AND SHALL HAVE NO CIRCULAR, DAMAGED, OR GIRDLING ROOTS.
3. TYPE OF TREE--
   AS SPECIFIED BY THE PUBLIC WORKS DEPARTMENT.
4. SIZE OF TREE--
   SHALL BE 15 GALLON, 1-INCH MINIMUM CALIPER, 7-FOOT MINIMUM HEIGHT OR LARGER AND A CANOPY SPREAD OF 2'-3', AS REQUIRED BY DEVELOPMENT APPROVAL.
5. ROOT BARRIERS--
   NEW SUBDIVISION TREES SHALL HAVE AN APPROVED ROOT BARRIER INSTALLED TO A MINIMUM DEPTH OF 24".

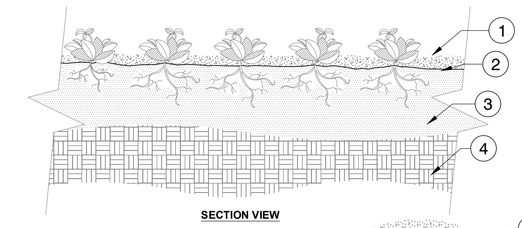
ENGINEERING DEPARTMENT		CITY OF MERCED, CA.
TREE PLANTING & STAKING		L-1
DRAWN: KGE	APPROVED BY: David R. Fuchs	DATE: 3/17/08
DATE: 1/02	CITY ENGINEER	SHEET OF
REVISED: 3/17/08		

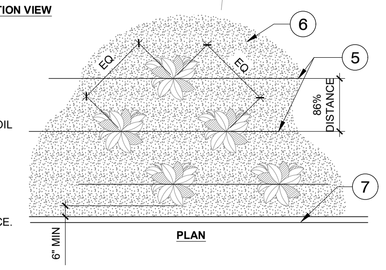
1 L3.1 TREE PLANTING AND STAKING
NTS



1. BARK MULCH PER PLAN.
2. WATER RETENTION BERM, PROVIDE POSITIVE DRAINAGE AWAY FROM ROOTBALL.
3. FERTILIZER TABLETS, AS PER SPECIFICATIONS.
4. ROOT BALL, SET CROWN 1" ABOVE GRADE.
5. PLANTING PIT TO BE TWICE THE DIAMETER OF ROOTBALL. REFER TO SPECIFICATIONS FOR BACKFILL MIX.
6. FINISH GROUNDCOVER GRADE.

2 L3.1 SHRUB PLANTING
NTS





1. FINISH SURFACE WITH 3" OF TOP DRESSING OF MULCH. SEE SPECS.
2. SOIL BELOW MULCH
3. AMENDED SOIL. SEE PLANS FOR SOIL PREPARATION.
4. EXISTING SOIL
5. GROUNDCOVER PLANTS TO BE TRIANGULARLY SPACED, ROWS OFFSET 86% PLANT DISTANCE.
6. MULCH PER PLAN.
7. ADJACENT PAVING PER PLAN.

NOTES:
1. SEE PLANTING LEGEND FOR GROUNDCOVER SPECIES AND SIZE.
2. SETTLE SOIL AROUND ROOT BALL OF EACH GROUNDCOVER PRIOR TO MULCHING.

3 L3.1 GROUND COVER PLANTING

1. ROOT BALL, CROWN HEIGHT PER CITY OF MERCED DETAIL
2. PLANT PIT PER CITY OF MERCED DETAIL
3. BACKFILL / AUGERED SOIL - COMPACTION PER CITY OF MERCED DETAIL
4. EXISTING GRADE SLOPE
5. WATER RETENTION BERM
6. DECOMPOSED GRANITE OR MULCH PER PLANTING AND/OR CONSTRUCTION PLAN

NOTES:
1. FOR ALL BASIC TREE PLANTING INFORMATION INCLUDING BUT NOT LIMITED TO STAKING, TREE TIES, CONDITION AND SIZE OF TREE, FERTILIZER PELLETS, ETC. REFER TO CITY OF MERCED TREE PLANTING AND STAKING DETAIL L-1 ON THIS SHEET

4 L3.1 TREE PLANTING ON SLOPE - MERCED
NTS

PLANTING NOTES

1. VERIFY EXACT LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.
2. ALL PLANT MATERIAL TO BE SET UP FOR REVIEW BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. NO SUBSTITUTIONS FOR PLANT MATERIAL WILL BE ALLOWED UNLESS PRIOR ARRANGEMENTS HAVE BEEN APPROVED BY LANDSCAPE ARCHITECT. IN THE EVENT OF PLANT MATERIAL UNAVAILABILITY, CONTACT LANDSCAPE ARCHITECT FOR ALTERNATIVE SOURCES OR APPROVED SPECIES SUBSTITUTION.
3. PLANT QUANTITIES ARE FOR CONVENIENCE OF THE CONTRACTOR. CONTRACTOR TO CONFIRM EXACT NUMBER.
4. TREE STAKES ARE TO BE PLACED PERPENDICULAR TO PREVAILING WINDS. REMOVE NURSERY STAKES, REPLACE WITH STAKES PER DETAIL. TREE TIES SHALL BE CINCH-TIE OR EQUAL.
5. ALL TREE, SHRUB AND GROUND COVER PLANTINGS TO HAVE 3" MINIMUM DEPTH BARK MULCH OR DECOMPOSED GRANITE PLACED AROUND PLANT BASE PER PLANTING DETAILS. SEE CONSTRUCTION PLAN.
6. REFER TO PLANS, DETAILS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
7. PLANT MATERIAL SHALL BE BID ON THE BASIS OF SPECIES AND CONTAINER SIZE, NOT ON CONTAINER SIZE ALONE.

SOIL ANALYSIS NOTES

1. AFTER MASS GRADING IS COMPLETED AND PRIOR TO THE INITIATION OF ANY LANDSCAPE WORK, CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A SOIL FERTILITY REPORT WITH AMENDMENT RECOMMENDATIONS AND SUBMITTING THE RESULTS FOR APPROVAL TO THE LANDSCAPE ARCHITECT AND OWNER'S REPRESENTATIVE.
2. UPON RECEIPT OF APPROVED SUBMITTAL FROM THE LANDSCAPE ARCHITECT AND OWNER'S REPRESENTATIVE, ALL PLANTING AREAS SHALL BE AMENDED PER SOIL REPORT RECOMMENDATIONS (OR AS MODIFIED BY THE LANDSCAPE ARCHITECT) PRIOR TO THE INSTALLATION OF ANY PLANTING MATERIAL.
3. CLEAN TOOLS SHALL BE USED WHEN COLLECTING SOIL SAMPLES. ALL SAMPLES TO BE TAKEN FROM A SOIL DEPTH OF 12 INCHES.
4. SOIL SAMPLES FOR THE FERTILITY ANALYSIS TO BE OBTAINED FROM THE FOLLOWING AREAS:
   A. ONE SAMPLE FROM A PROPOSED PLANTING AREA ON THE NORTH OF PROJECT.
   B. ONE SAMPLE FROM A PROPOSED PLANTING AREA ON THE SOUTH OF PROJECT.
   C. ONE SAMPLE FROM NEW FIELD TURF AREA

   ALL SAMPLES SHALL BE MIXED THOROUGHLY AS ONE AND SENT FOR A LANDSCAPE SOIL ANALYSIS.
5. ALONG WITH RECOMMENDATIONS, SOIL ANALYSIS SHALL INCLUDE THE FOLLOWING INFORMATION:
   A. SOIL TEXTURE
   B. SOIL INFILTRATION RATE
   C. SOIL PH
   D. TOTAL SOLUBLE SALTS
   E. SODIUM
   F. PERCENT OF ORGANIC MATTER

HYDROSEED TURF NOTES

1. ALL IRRIGATION SHALL BE INSTALLED, COVERAGE TEST PERFORMED, AUDIT PERFORMED, AND ALL ADJUSTMENTS MADE PRIOR TO HYDROSEED OPERATIONS.
2. APPLY HYDROSEED PER HYDROSEEDING SPECIFICATIONS 02905.10.
3. 6 - 8 WEEKS AFTER HYDROSEEDING, OR AFTER THE FIRST MOWING; APPLY FOLLOW-UP FERTILIZER (15-15-15) AT 7 LBS/1,000 SF.
4. HYDROSEED IN FALL (OCTOBER) TO THE EXTENT POSSIBLE.

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LICENSE

REGISTERED LANDSCAPE ARCHITECT GREG MELTON #2121 EXP. 11-26 STATE OF CALIFORNIA

CONSULTANT

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

PLANTING DETAILS

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
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PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

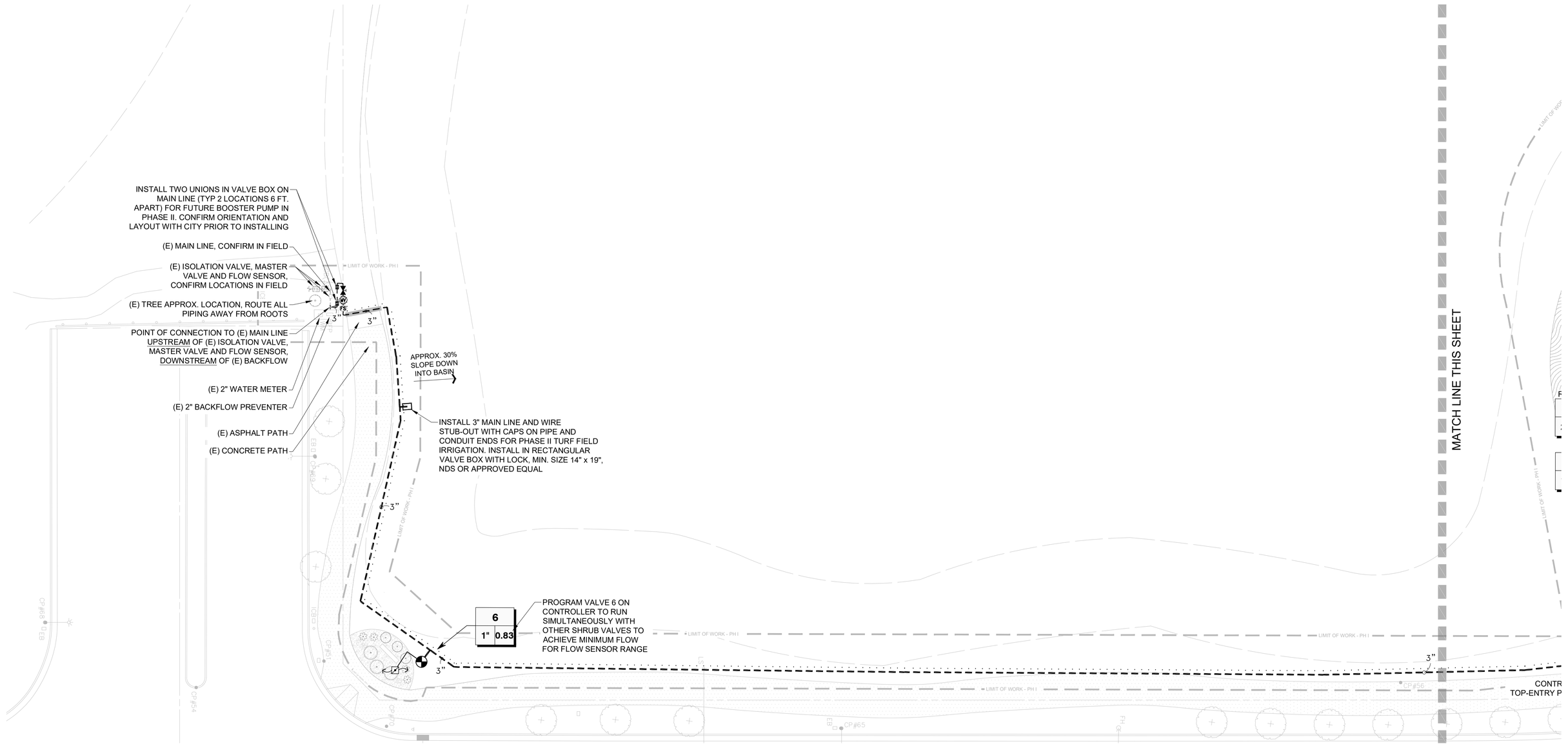
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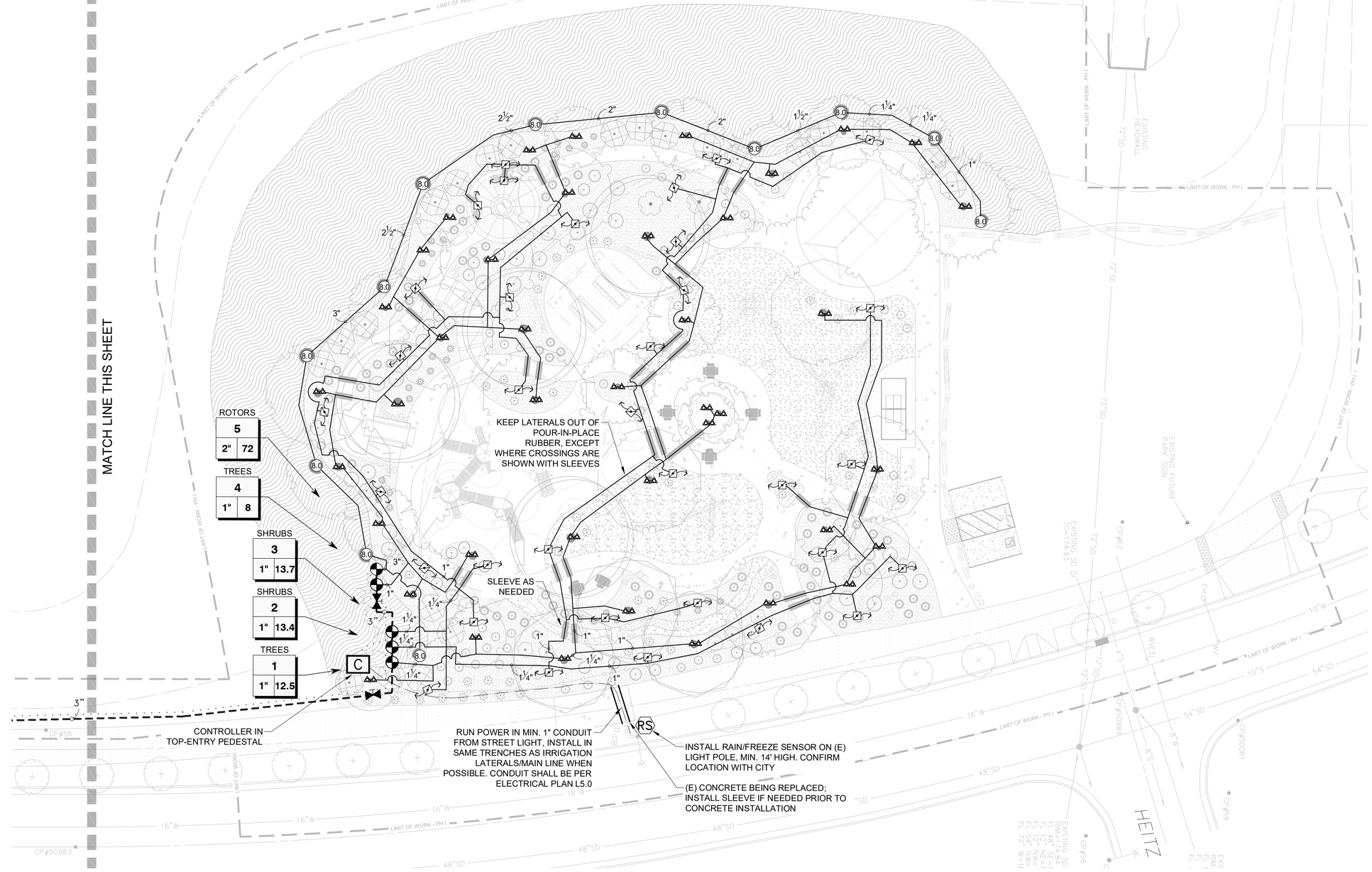
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Page 50 of 412





IRRIGATION SCHEDULE

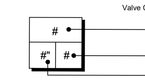
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	ARC	PSI	GPM	RADIUS
▲	RAIN BIRD RWS-M-B-C- 1401 MINI ROOT WATERING SYSTEM WITH 4 IN. DIAMETER X 18 IN. LONG WITH LOCKING GRATE, SEMI-RIGID MESH TUBE AND RAIN BIRD 1401 0.25 GPM BUBBLER, WITH CHECK VALVE. INSTALL 2 PER TREE FOR TOTAL OF 0.5 GPM.	360	30	0.25	3'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI	GPM	RADIUS
8.0	HUNTER I-20-12 8.0 SHRUB ROTOR, 12IN. POP-UP. ADJUSTABLE AND FULL CIRCLE. PLASTIC RISER. DRAIN CHECK VALVE. STANDARD NOZZLE.	25	6	37

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	PIPE TRANSITION POINT TO FLEX TUBING AND EMITTERS TRANSITION FROM PVC LATERAL TO IPS FLEX PIPE AND POINT-SOURCE EMITTERS FOR SHRUBS. - POINT-SOURCE EMITTERS SHALL BE RAIN BIRD PCT-05 1/2" FPT INLET 5 GALLON-PER-HOUR EMITTERS (0.083 GPM). - EMITTERS NOT SHOWN; CONTRACTOR SHALL PLACE IPS TUBING AND EMITTER TO EVERY PLANT SHOWN IN THE PLANTING PLAN EXCEPT HYDROSEED. SEE DETAIL.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	HUNTER ICV-G + HUNTER TWO-WIRE DECODER 1IN., 1-1/2IN., 2IN., AND 3IN. PLASTIC ELECTRIC REMOTE CONTROL VALVES. GLOBE CONFIGURATION, WITH NPT THREADED INLET/OUTLET - INSTALL HUNTER ICD DECODER INSIDE VALVE BOX
	ISOLATION VALVE - SIZE PER PIPE SIZE. - 2" AND SMALLER - WILKINS 850-XL FULL PORT BRONZE BALL VALVE WITH "T" HANDLE. - 2-1/2" AND LARGER - NIBCO 619-RW-SON FLANGED GATE VALVE WITH SQ. OP. NUT.
MV	GRISWOLD 2250 2" 2" PRESSURE REDUCING, NORMALLY CLOSED MASTER VALVE. CAST IRON AND BRONZE MATERIAL. NPT END CONNECTION. - INSTALL WITH HUNTER ICD-100 SINGLE-STATION DECODER. ASSIGN TO CONTROLLER AS MASTER VALVE PER MANUFACTURER'S INSTRUCTIONS.
C	HUNTER PED-SS-A2C-75D-SS AND A2C-LTEM 75-STATION DECODER CONTROLLER IN AN OUTDOOR STAINLESS STEEL PEDESTAL, AND CELLULAR COMMUNICATION MODULE FOR CONNECTION TO CENTRALUS CLOUD CONTROL. - CONTRACTOR SHALL INSTALL ICD DECODERS AT ALL VALVES AND PROGRAM WITH CONTROLLER. - CONTRACTOR SHALL INSTALL CONTROLLER GROUNDING AND 2-WIRE PATH GROUNDING PER MANUFACTURERS REQUIREMENTS AND PER MDG SPECIFICATIONS
RS	HUNTER WSS-SEN WIRELESS SOLAR, RAIN, FREEZE SENSOR WITH OUTDOOR INTERFACE, INSTALL SENSOR AS SHOWN ON PLAN. - ORDER WR-GUARD RECEIVER GUARD SEPARATELY AND INSTALL WITH RECEIVER ON CONTROLLER PEDESTAL PER MANUFACTURER'S INSTRUCTIONS, FACING DIRECTION OF SENSOR. PROGRAM WITH CONTROLLER.
FS	FLOMEC OS200-20 2" 2 IN. INSERTION FLOW METER, SCHEDULE 80 PVC HOUSING. 0.92 GPM-138 GPM RANGE, MAX. OPERATING PRESSURE 150 PSI. 2-WIRE CONNECTOR W/ LED INDICATORS FOR POWER AND PULSE. - INSTALL WITH HUNTER ICD-SEN FLOW SENSOR DECODER.
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40 FOR UP TO 2", CLASS 315 FOR 2 1/2" AND LARGER
	IRRIGATION MAINLINE: PVC SCHEDULE 40 FOR UP TO 2", CLASS 315 FOR 2 1/2" AND LARGER. WITH 12 AWG HUNTER ID2 TWO-WIRE CABLE IN CONDUIT (SHOWN ADJACENT TO MAIN LINE)
	PIPE SLEEVE: PVC SCHEDULE 40 SCHEDULE 40 PVC AT 2X LINE SIZE FOR LATERALS, CONDUIT, AND MAINLINE UNDER ALL PAVING, TYPICAL, WHETHER SHOWN OR NOT. COORDINATE LOCATIONS WITH GENERAL CONTRACTOR PRIOR TO PAVING INSTALLATION. WIRES AND MAINLINE SHALL BE PLACED ON SEPARATE SLEEVES.

Valve Callout



WIRE FOR POWER TO NEW CONTROLLER, FROM (E) LIGHT POLE AS SHOWN

LEGEND NOTES:
1. ALL EQUIPMENT SPECIFIED SHALL BE PURCHASED, OR APPROVED EQUAL.
2. DO NOT BID, ORDER MATERIALS, OR INSTALL SYSTEM BEFORE READING THE IRRIGATION NOTES, WIRING NOTES, AND SPECIFICATIONS IN THEIR ENTIRETY. THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL REVISIONS DUE TO FAILURE TO DO SO.

IRRIGATION NOTES:

1. THIS SYSTEM IS DESIGNED FOR A MAXIMUM DEMAND OF 40 GPM AND 45 PSI AT POINT OF CONNECTION WITH A 10-HOUR WATER WINDOW. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY EXISTING CONDITIONS. COORDINATE WITH OWNER TO REVIEW IRRIGATION SYSTEM PRIOR TO START OF WORK. IN THE EVENT THAT EXISTING CONDITIONS ARE DIFFERENT THAN STATED, CONTACT LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION. SEE CONTRACT DOCUMENTS.

2. THE INTENT OF THIS IRRIGATION SYSTEM IS TO PROVIDE THE MINIMUM AMOUNT OF WATER REQUIRED TO SUSTAIN GOOD PLANT HEALTH. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROGRAM THE IRRIGATION CONTROLLER BASED ON RECOMMENDATIONS FROM THE LANDSCAPE WATER AUDIT AND AS REQUIRED BY THE 2025 UPDATED MODEL WATER EFFICIENT LANDSCAPE ORDINANCE, CALIFORNIA CODE OF REGULATIONS TITLE 23, DIVISION 2, CHAPTER 2.7 AND EXISTING FIELD CONDITIONS. THE CONTRACTOR SHALL MAKE SCHEDULING ADJUSTMENTS AS NEEDED TO ACHIEVE THE MOST EFFICIENT APPLICATION OF WATER BASED ON PLANT TYPE, WATER USE REQUIREMENTS, SOIL TYPE, GRADES, SUN EXPOSURE, SHADE, WIND, ETC.

3. THIS DRAWING IS DIAGRAMMATIC. IRRIGATION COMPONENTS SHOWN BENEATH PAVING, UTILITIES, PLANTINGS, ETC. ARE FOR GRAPHIC CLARITY ONLY. PLACE ALL PIPING, VALVES, AND OTHER IRRIGATION COMPONENTS WITHIN THE ADJACENT PLANTER EXCEPT WHERE PIPES CROSSOVER BENEATH PAVING, STRUCTURES, WALLS, ETC. THE CONTRACTOR SHALL PLACE PIPING TO PREVENT CONFLICT WITH UTILITIES, TREE LOCATIONS, PLANTING, HARDSCAPE COMPONENTS, WATER PLAY FEATURES, PLAY AREAS AND FURNISHINGS. SEE PLANTING PLAN FOR PLANT COUNT AND LAYOUT. REFER TO CONTRACT DOCUMENTS FOR PROJECT SCOPE.

4. THE CONTRACTOR SHALL PROVIDE COMPLETE RECORD DRAWINGS TO OWNER AT COMPLETION OF PROJECT AND AS REQUIRED BY CONTRACT DOCUMENTS.

5. THE IRRIGATION SYSTEM IS DESIGNED TO OPERATE AT THE FOLLOWING PRESSURES: MP ROTATORS: 30-40 PSI; DRIP TREE RINGS - 25 PSI; SHRUB DRIP LINE - 25 PSI. ALL IRRIGATION SHALL BE INSTALLED BY CONTRACTOR AT THE LOCATIONS INDICATED ON THE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF CONTRACTOR TO NOTIFY LANDSCAPE ARCHITECT OF ANY DEVIATION WHICH MAY AFFECT THE SPACING OR LOCATION OF THE IRRIGATION LAYOUT.

6. CONTRACTOR SHALL BE RESPONSIBLE TO SLEEVE ALL MAIN LINES AND LATERAL LINES WHEN CROSSING BENEATH PAVEMENT, WALKWAYS, BUILDINGS, WALLS, ETC. WHETHER OR NOT SHOWN ON THE IRRIGATION PLAN. COORDINATE LOCATIONS WITH GENERAL CONTRACTOR PRIOR TO PAVING INSTALLATION, AND WITH OTHER TRADES AS NECESSARY. SIZE PER PLAN AND/OR AS NEEDED BASED ON THE NUMBER OF IRRIGATION LINES AND SIZES. WIRES AND MAINLINE SHALL BE PLACED ON SEPARATE SLEEVES. CONTRACTOR SHALL SUBMIT SLEEVING PLAN TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO PROJECT START.

7. ALL IRRIGATION REMOTE CONTROL VALVES, QUICK COUPLER VALVES, ELECTRIC PULL BOXES SHALL BE INSTALLED IN PLANTED AREAS AND IN VALVE BOXES. NO VALVES/VALVE BOXES SHALL BE INSTALLED IN PAVED AREAS OR IN TURF AREAS. VALVE BOXES AND LIDS SHALL BE GREEN, UNLESS IN DECOMPOSED GRANITE OR COBBLE, IN WHICH CASE VALVE BOXES AND LIDS SHALL BE TAN.

8. WHENEVER POSSIBLE, MAIN LINE AND LATERALS SHALL NOT BE RUN THROUGH DECOMPOSED GRANITE.

9. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE A COMPLETE LANDSCAPE WATER AUDIT PER REQUIREMENTS SET FORTH IN THE 2025 UPDATED MODEL WATER EFFICIENT LANDSCAPE ORDINANCE, CALIFORNIA CODE OF REGULATIONS TITLE 23, DIVISION 2, CHAPTER 2.7. CONTRACTOR SHALL MAKE FINAL ADJUSTMENTS TO THE IRRIGATION SYSTEM BASED ON LANDSCAPE WATER AUDIT RECOMMENDATIONS. SEE CONTRACT DOCUMENTS.

10. MAIN LINE PIPE SIZES AS NOTED. LATERAL PIPE END RUNS SHALL BE 1" PIPE.

11. SEE CONTRACT DOCUMENTS, SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.

12. CONTRACTOR SHALL REPLACE ANY BROKEN PARTS OF ALL SALVAGED AND RELOCATED IRRIGATION EQUIPMENT AND PIPES, AND SHALL VERIFY FUNCTIONALITY OF PIPES AND EQUIPMENT AFTER REINSTALLATION IN PROPOSED LOCATIONS BY TURNING ON VALVES AND OBSERVING PROPER WATER FLOW.

TREE PROTECTION

EXISTING TREES SHALL BE PROTECTED PER TREE PROTECTION MEASURES AND DETAIL ON EXISTING CONDITIONS AND DEMOLITION PLAN, SHEET L1.1.

WIRING NOTES - TWO-WIRE SYSTEM

1. WIRING SHALL BE INSTALLED IN 1" PVC SCHEDULE 40 CONDUIT (SIZE PER PLAN) AND SHALL OCCUPY THE SAME TRENCH AND SHALL BE INSTALLED ALONG THE SAME ROUTE AS THE PRESSURE SUPPLY LINE WHEREVER POSSIBLE.

2. A ONE-QUARTER (1/4) INCH POLYPROPYLENE PULL ROPE SHALL BE INSTALLED ALONG THE ENTIRE LENGTH OF THE CONDUIT RUN AND INTO EACH VALVE BOX AND PULL BOX.

3. AN EXPANSION CURL SHALL BE PROVIDED WITHIN THREE (3) FEET OF EACH WIRE CONNECTION. EXPANSION CURL SHALL BE EIGHTEEN (18) INCHES IN LENGTH AT EACH SPLICE CONNECTION AND AT EACH ELECTRIC CONTROL VALVE SO THAT IN CASE OF REPAIR, THE VALVE BONNET OR SPLICE MAY BE BROUGHT TO THE SURFACE WITHOUT DISCONNECTION OF THE CONTROL WIRES.

4. INSTALL PULL BOXES AT 150' INTERVALS AND AT EACH 5TH CHANGE IN DIRECTION, WHICHEVER COMES FIRST. KEEP OUT OF ALL TURF FIELD PLAYING SURFACES. REMOTE CONTROL VALVE BOXES MAY BE USED AS WIRE PULL BOXES. INSTALL CARSON 910 GRAY ELECTRIC PULL BOXES. SEE VALVE BOX LAYOUT DETAIL FOR ARRANGEMENT AND MAXIMUM NUMBER OF VALVE BOXES IN BANKS.

5. ALL SPLICES SHALL BE MADE IN EITHER A VALVE BOX OR SPLICE BOX, WITH VANDAL-RESISTANT BOLT-DOWN LID. ALL SPLICES SHALL BE MADE WITH DBR/Y6 WATERPROOF CONNECTORS (OR EQUAL) AND AS PER MANUFACTURER'S SPECIFICATIONS.

6. USE ONE WATERPROOF CONNECTOR PER WIRE CONNECTION.

7. CONTRACTOR SHALL INSTALL ALL WIRING PER MANUFACTURER'S SPECIFICATIONS.

LANDSCAPE DOCUMENTATION NOTES

1. UPON APPROVAL OF THE LANDSCAPE DOCUMENTATION PACKAGE, SUBMIT A COPY OF THE WATER EFFICIENT LANDSCAPE WORKSHEET TO THE LOCAL WATER PURVEYOR.

2. "I HAVE COMPLIED WITH THE CRITERIA OF THE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN AND IRRIGATION DESIGN PLANS." SIGNED _____ PRINTED NAME:

3. UPON COMPLETION PROVIDE CERTIFICATION BY EITHER THE SIGNER OF THE LANDSCAPE DESIGN PLAN, THE SIGNER OF THE IRRIGATION DESIGN PLAN, OR THE LICENSED LANDSCAPE CONTRACTOR THAT THE LANDSCAPE PROJECT HAS BEEN INSTALLED PER THE APPROVED LANDSCAPE DOCUMENTATION PACKAGE.

NORTH

0 20 40
SCALE: 1" = 20'

811 Know what's BELOW CALL before you dig.

MDG MELTONDESIGNGROUP
820 BROADWAY ST.
CHICO, CA 95928
(530) 899-1616
meltondg.com

LICENSE

REGISTERED LANDSCAPE ARCHITECT GREG MELTON #2121 EXP. 11-26 STATE OF CALIFORNIA

CONSULTANT

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

IRRIGATION PLAN

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
4.		
5.		
6.		
7.		
8.		

PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

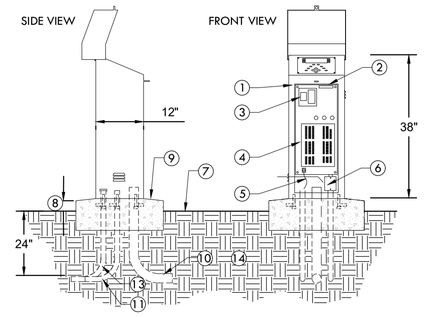
SHEET NUMBER

L4.0

SHEET 26 OF 31

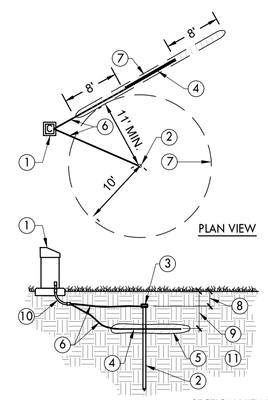
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PLOT DATE: February 26, 2026 - 7:13 PM
FILE NAME: G:\MDG\2600-2699\2615 General Vang Pao Park MP and Playground\2615 CAD\CDs\SHEETS\2615-L4.0-IRRG.dwg



1. CONTROLLER IN TOP ENTRY ENCLOSURE PER PLAN
2. FAN OPTION PER MANUFACTURER SPECIFICATIONS
3. GFI OUTLET AND SWITCH
4. TRANSIENT PROTECTION BOARD
5. #6 AWG GROUNDING WIRE TO EARTH GROUND
6. 120VAC JUNCTION BOX
7. FINISH GRADE
8. SET TOP OF CONCRETE BASE 3-1/2" ABOVE FINISH GRADE
9. 24" X 24" X 8" CONCRETE BASE
10. 3" PVC SCHEDULE 40 CONDUIT AND FITTINGS FOR VALVE WIRES AND SENSOR CABLE
11. 1-1/2" PVC SCHEDULE 40 CONDUIT AND FITTINGS FOR EARTH GROUND
12. 1-1/2" PVC SCHEDULE 40 CONDUIT AND CAP - EMPTY FOR FUTURE, NOT SHOWN. CONTRACTOR TO INSTALL
13. 1-1/2" PVC SCHEDULE 40 CONDUIT - 120V POWER SUPPLY
14. UNDISTURBED SUBGRADE OR COMPACTED BACKFILL PER SPECIFICATIONS

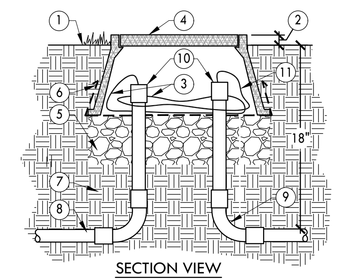
1 L4.1 CONTROLLER IN TOP ENTRY ENCLOSURE
NOT TO SCALE



NOTE:
1. DO NOT INSTALL ANY OTHER WIRES OR CABLE WITHIN THE SPHERE OF INFLUENCE OF THE GROUNDING ELECTRODES.
2. EARTH-TO-GROUND RESISTANCE SHALL BE NO MORE THAN 10 OHMS. IF RESISTANCE IS MORE THAN 10 OHMS, INSTALL ADDITIONAL GROUND PLATES USING ASIC GUIDELINES 100-2002.
3. EARTH-TO-GROUND SHALL BE TESTED AND CERTIFIED BY APPROVED REPRESENTATIVE OF THE OWNER

1. CONTROLLER - 0 TO 64 STATIONS; SEE CONTROLLER DETAIL
2. 5/8" X 10' COPPER GROUND ROD - DRIVE INTO GROUND AT A VERTICAL POSITION OR OBLIQUE ANGLE (NOT TO EXCEED 45°) 10' FROM ELECTRONIC EQUIPMENT. CONNECT A 6 AWG BARE COPPER WIRE TO THE GROUND ROD USING A CADWELD, MODEL GR1161G "ONE-SHOT" WELDING KIT.
3. EXOTHERMIC WELDING KIT SUCH AS CADWELD "ONE-SHOT", MODEL GR1161G OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S SPECIFICATIONS. (NO SOLDER SHALL BE ALLOWED TO MAKE CONNECTIONS.)
4. COPPER GROUND PLATE(S) (4" X 96" X 0.0625) WITH 25' OF 6 AWG BARE COPPER WIRE FACTORY ATTACHED. CONNECT WIRE TO ELECTRONIC EQUIPMENT GROUND LUG (USE BRASS SPLIT BOLT TO CONNECT TWO OR MORE WIRES AS NEEDED).
5. 100 LBS EARTH CONTACT MATERIAL, PAIGE ELECTRIC MODEL "POWER SET" OR APPROVED EQUAL. SPREAD EVENLY ALONG COPPER PLATE LENGTH AS PER MANUFACTURER'S SPECIFICATIONS.
6. #6 AWG BARE COPPER WIRE; INSTALL IN AS STRAIGHT A LINE AS POSSIBLE. WHEN MAKING TURNS USE A SWEEPING BEND WITH A MINIMUM RADIUS OF 8" AND A MINIMUM INCLUDED ANGLE OF 90°
7. ELECTRODE SPHERE OF INFLUENCE - INSTALL WIRES, CABLES AND ELECTRONIC EQUIPMENT OUTSIDE "THE SPHERE OF INFLUENCE" OF THE GROUNDING ELECTRODES
8. 12" BELOW FINISH GRADE
9. 30" BELOW FINISH GRADE
10. 1-1/2" CONDUIT SWEEP WITH A MINIMUM RADIUS OF 8" AND A MINIMUM INCLUDED ANGLE OF 90°
11. UNDISTURBED SUBGRADE; SOIL SURROUNDING COPPER ELECTRODES WITHIN THE SPHERE OF INFLUENCE SHALL BE KEPT AT A MINIMUM MOISTURE LEVEL OF 15% AT ALL TIMES

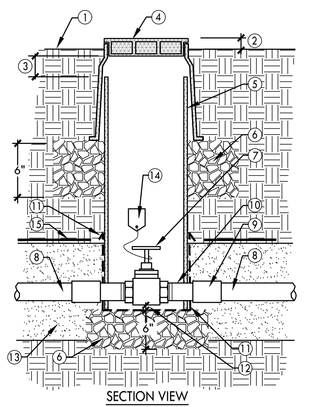
2 L4.1 CONTROLLER EARTH GROUND, (0-64 STATIONS)
NOT TO SCALE



1. FINISH GRADE
2. SET TOP OF BOX ABOVE SUBGRADE: 3-1/4" DECOMPOSED GRANITE; 1-1/2" IN TURF. SET VALVE BOX HEIGHT TO MATCH GRADE OF ADJACENT HARDSCAPE.
3. 2-WIRE DECODER CABLE (12 AWG, LONG RANGE, HEAVY DUTY DECODER CABLE; HUNTER 'IDWIRE' OR APPROVED EQUAL).
4. PLASTIC VALVE BOX WITH VANDAL-RESISTANT BOLT-DOWN LID. LID MARKED IRRIGATION. SEE FRESNO SPECIFICATIONS FOR ADDITIONAL DETAILS.
5. 3/4" CRUSHED ROCK; 6" MINIMUM DEPTH, EXTEND 6" BEYOND VALVE BOX IN ALL DIRECTIONS
6. 1/4" GALVANIZED WIRE CLOTH, INSTALL ON TOP OF DRAIN ROCK AND EXTEND 6" BEYOND VALVE BOX IN ALL DIRECTIONS.
7. UNDISTURBED SUBGRADE
8. CONDUIT TO CONTROLLER. PVC SCHEDULE 40 CONDUIT
9. CONDUIT TO CONTROLLER. PVC SCHEDULE 40 CONDUIT SWEEP ELBOWS WITH COUPLERS BOTH ENDS
10. PVC CONDUIT COUPLER. SOLVENT WELD TO CONDUIT PIPE ENDS.
11. PROVIDE MIN. 24" SERVICE LOOP COILED NEATLY AROUND INSIDE OF VALVE BOX.

NOTE:
1. SEE WIRING NOTES FOR PULL BOX LOCATIONS
2. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION

3 L4.1 IRRIGATION PULL BOX - TWO-WIRE
NOT TO SCALE



1. FINISH GRADE
2. SET TOP OF BOX TO ALLOW FOR FINISH SURFACE IN PLANTER OR DECOMPOSED GRANITE.
3. ALLOW 3" BETWEEN TOP OF THE INTERIOR VALVE BOX COVER AND PVC PIPE.
4. GREEN PLASTIC VALVE BOX WITH LOC-KIT AND L-BOLT; CARSON MODEL 910 OR APPROVED EQUAL
5. 10" DIAMETER PVC PIPE; LENGTH AS NEEDED. CUT TOP OF PVC PIPE SQUARE AND CLEAN OF ALL ROUGH EDGES AND BURRS.
6. 3/4" CRUSHED ROCK; 6" MINIMUM DEPTH. EXTEND 6" BEYOND VALVE BOX ALL DIRECTIONS.
7. BRASS BALL VALVE, FULL PORT- 2" AND SMALLER WITH "T" HANDLE. WHEEL HANDLES ARE NOT ALLOWED. SEE SPECIFICATIONS.
8. PVC SCHEDULE 40 OR CLASS 315 MAIN LINE AS PER PLANS
9. PVC SCHEDULE 80 COUPLER
10. PVC SCHEDULE 80 T.O.E. NIPPLE, MIN. 6" LENGTH
11. INSTALL 1/4" GALVANIZED WIRE CLOTH AT BOTTOM OF 10" PIPE AND SECURE TO SIDES ABOVE PIPE OPENING. TRIM OPENING FOR EQUIPMENT/PIPES AS NEEDED.
12. LEAVE MINIMUM 2" CLEAR SPACE BETWEEN BOTTOM OF VALVE AND FITTINGS AND TOP OF DRAIN ROCK.
13. SAND BACKFILL, 6" ABOVE AND 6" BELOW MAIN LINE PER SPECIFICATIONS
14. IRRIGATION WATER ID TAG; T.CHRISTY MODEL ID-MAX-B2-NP012
15. IRRIGATION DETECTABLE MARKING TAPE, T.CHRISTY OR APPROVED EQUAL. PLACE TAPE ON TOP OF SAND.

NOTES:
1. GATE VALVES 2" AND SMALLER SHALL BE THREADED.
2. WHEN THE MAIN LINE IS TERMINATED AT THE VALVE, EXTEND MAIN LINE 48" BEYOND VALVE BOX AND CAP.

4 L4.1 ISOLATION VALVE 2" AND SMALLER
NOT TO SCALE

1. FINISH GRADE
2. SET TOP OF BOX ABOVE SUBGRADE: 3-1/4" DECOMPOSED GRANITE; 1-1/2" IN TURF. SET VALVE BOX HEIGHT TO MATCH GRADE OF ADJACENT HARDSCAPE.
3. ALLOW 3" BETWEEN TOP OF THE INTERIOR VALVE BOX COVER AND PVC PIPE.
4. GREEN PLASTIC VALVE BOX WITH LOC-KIT AND L-BOLT; CARSON MODEL 910 OR APPROVED EQUAL
5. 10" DIAMETER PVC PIPE; LENGTH AS NEEDED. CUT TOP OF PVC PIPE SQUARE AND CLEAN OF ALL ROUGH EDGES AND BURRS.
6. 3/4" CRUSHED ROCK; 6" MINIMUM DEPTH. EXTEND 6" BEYOND VALVE BOX ALL DIRECTIONS.
7. BRASS BALL VALVE, FULL PORT- 2" AND SMALLER WITH "T" HANDLE. WHEEL HANDLES ARE NOT ALLOWED. SEE SPECIFICATIONS.
8. PVC SCHEDULE 40 OR CLASS 315 MAIN LINE AS PER PLANS
9. PVC SCHEDULE 80 COUPLER
10. PVC SCHEDULE 80 T.O.E. NIPPLE, MIN. 6" LENGTH
11. SAND BACKFILL, 6" ABOVE AND 6" BELOW MAIN LINE PER SPECIFICATIONS
12. IRRIGATION WATER ID TAG; T.CHRISTY MODEL ID-MAX-B2-NP012
13. LEAVE MINIMUM 2" CLEAR SPACE BETWEEN BOTTOM OF VALVE AND FITTINGS AND TOP OF DRAIN ROCK.
14. IRRIGATION MAIN LINE PER SPECIFICATIONS
15. 3/4" CRUSHED ROCK; 6" MINIMUM DEPTH, EXTEND 6" BEYOND VALVE BOX IN ALL DIRECTIONS
16. 1/4" GALVANIZED WIRE CLOTH, INSTALL ON TOP OF DRAIN ROCK AND EXTEND 6" BEYOND VALVE BOX IN ALL DIRECTIONS.
17. 3/4" CRUSHED ROCK; 6" MINIMUM DEPTH, EXTEND 6" BEYOND VALVE BOX IN ALL DIRECTIONS
18. 12" BELOW FINISH GRADE
19. 30" BELOW FINISH GRADE
20. 1-1/2" CONDUIT SWEEP WITH A MINIMUM RADIUS OF 8" AND A MINIMUM INCLUDED ANGLE OF 90°
21. UNDISTURBED SUBGRADE; SOIL SURROUNDING COPPER ELECTRODES WITHIN THE SPHERE OF INFLUENCE SHALL BE KEPT AT A MINIMUM MOISTURE LEVEL OF 15% AT ALL TIMES
22. ELECTRODE SPHERE OF INFLUENCE - INSTALL WIRES, CABLES AND ELECTRONIC EQUIPMENT OUTSIDE "THE SPHERE OF INFLUENCE" OF THE GROUNDING ELECTRODES
23. #6 AWG BARE COPPER WIRE; INSTALL IN AS STRAIGHT A LINE AS POSSIBLE. WHEN MAKING TURNS USE A SWEEPING BEND WITH A MINIMUM RADIUS OF 8" AND A MINIMUM INCLUDED ANGLE OF 90°
24. EXOTHERMIC WELDING KIT SUCH AS CADWELD "ONE-SHOT", MODEL GR1161G OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S SPECIFICATIONS. (NO SOLDER SHALL BE ALLOWED TO MAKE CONNECTIONS.)
25. COPPER GROUND PLATE(S) (4" X 96" X 0.0625) WITH 25' OF 6 AWG BARE COPPER WIRE FACTORY ATTACHED. CONNECT WIRE TO ELECTRONIC EQUIPMENT GROUND LUG (USE BRASS SPLIT BOLT TO CONNECT TWO OR MORE WIRES AS NEEDED).

5 L4.1 ISOLATION VALVE, 2-1/2" AND LARGER
NOT TO SCALE

1. FINISH GRADE PER LANDSCAPE PLAN.
2. MULCH LAYER PER LANDSCAPE PLAN.
3. APPROVED BACKFILL PER PLANTING PLAN.
4. SAND BACKFILL; MINIMUM 6" ABOVE AND BELOW MAIN LINE WITH MINIMUM 6" BACKFILL.
5. IRRIGATION MAIN LINE DETECTABLE MARKING TAPE. INSTALL ABOVE IRRIGATION MAIN LINE PIPE ON SAND BACKFILL. RUN ENTIRE LENGTH OF MAIN LINE AND ON ALL BRANCHES. T.CHRISTY OR APPROVED EQUAL
6. DRIP LINE, INSTALL 4" BELOW FINISH GRADE AND STAKE EVERY THREE (3) FEET.
7. IRRIGATION TWO-WIRE CABLE AND PULL ROPE, SEE SPECIFICATIONS. INSTALL IN CONDUIT PER CITY OF MERCED
8. WIDTH AS REQUIRED TO MAINTAIN MINIMUM 4" HORIZONTAL SEPARATION FROM PIPE TO PIPE AND PIPE TO TRENCH WALL. NO PIPE SHALL BE LAID OVER ANOTHER.
9. IRRIGATION MAIN LINE. SIZE AND TYPE PER PLAN. 24" MINIMUM COVER.
10. PVC LATERAL. SIZE AND TYPE PER PLAN. 18" MINIMUM COVER.

6 L4.1 TRENCHING IN PLANTER - TWO-WIRE IN CONDUIT
1" = 1'-0"

1. FINISH GRADE - SEE GRADING PLAN.
2. DECOMPOSED GRANITE PATH OR CONCRETE - SEE CONSTRUCTION PLAN.
3. SAND BACKFILL WITH 6" COVER ABOVE PIPE AND 6" BELOW PIPE.
4. IRRIGATION TWO-WIRE CABLE AND PULL ROPE. SEE SPECIFICATIONS. INSTALL IN CONDUIT PER CITY OF MERCED.
5. WIDTH AS NEEDED TO MAINTAIN A MINIMUM 4" HORIZONTAL SEPARATION BETWEEN PIPES. PIPES SHALL NOT BE LAID ON TOP OF ANOTHER. SEE SPECIFICATIONS.
6. TRENCH BACKFILL: NATIVE SITE SOIL, COMPACTED TO ELIMINATE SETTLING, 95% RELATIVE DENSITY.
7. MAIN LINE SLEEVING, TYPE AND SIZE PER PLAN. SEE SPECIFICATIONS.
8. LATERAL SLEEVING, PVC PIPE, PVC TYPE AND SIZE PER PLAN. SEE SPECIFICATIONS
9. PVC MAIN LINE PER PLANS.
10. PVC LATERAL LINE, TYPE AND SIZE PER PLAN. SEE SPECIFICATIONS.
11. SLEEVING DEPTH, 24" MINIMUM COVER BENEATH PAVING.
12. IRRIGATION MAIN LINE DETECTABLE MARKING TAPE. INSTALL ABOVE IRRIGATION MAIN LINE PIPE ON SAND BACKFILL. RUN ENTIRE LENGTH OF MAIN LINE AND ON ALL BRANCHES. T.CHRISTY OR APPROVED EQUAL
13. PAVEMENT SUBGRADE PER CONSTRUCTION PLAN

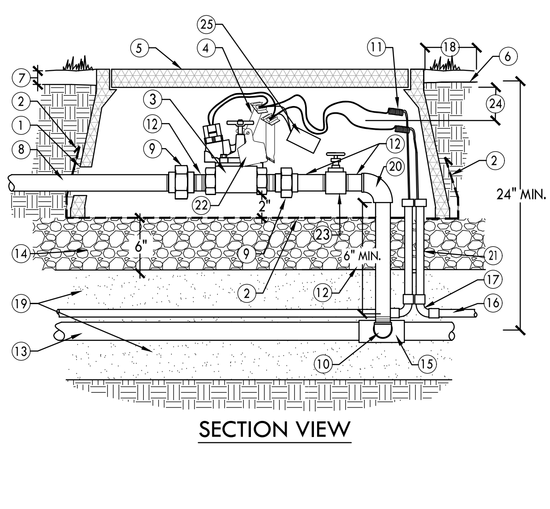
NOTE:
1. SIDES OF TRENCH SHALL BE DUG SQUARE AND CLEAN OF ALL SHARP MATERIAL.

7 L4.1 TRENCHING BENEATH PATH OR PAVEMENT - TWO-WIRE IN CONDUIT
NOT TO SCALE

TOP VIEW

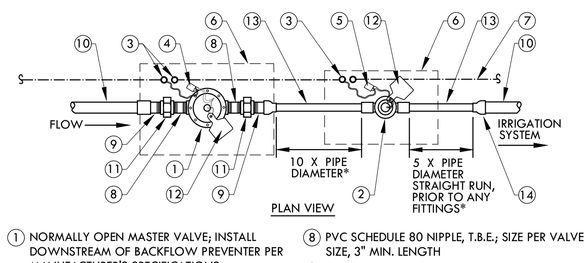
1. CENTER VALVE BOX OVER REMOTE CONTROL VALVE TO FACILITATE SERVICING VALVE.
2. SET REMOTE CONTROL VALVE AND VALVE BOX ASSEMBLY IN LEVEL AREA OF PLANTER OR TURF AS SHOWN ON PLAN. NO IRRIGATION BOXES SHALL BE INSTALLED IN CONCRETE, SIDEWALKS, PATHS, ROAD WAYS, ETC.
3. SET VALVE BOXES ON LEVEL BED, 6" DEEP OF 3/4" CRUSHED ROCK. PLACE 1/4" GALVANIZED WIRE MESH DIRECTLY BENEATH VALVE BOX ON TOP OF GRAVEL LEVELING BED.
4. SET BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE OF LAWN, WALK, FENCE, CURB, BUILDING, ETC.
5. AVOID HEAVILY COMPACTING SOIL AROUND VALVE BOXES TO PREVENT COLLAPSE AND DEFORMATION OF VALVE BOX SIDES.
6. INSTALL VALVE BOX EXTENSION BY VALVE BOX MANUFACTURER AS REQUIRED TO COMPLETELY ENCLOSE VALVE ASSEMBLY.
7. SET TOP OF BOX ABOVE SUBGRADE: 3-1/4" DECOMPOSED GRANITE; 1-1/2" IN TURF. SET VALVE BOX HEIGHT TO MATCH GRADE OF ADJACENT HARDSCAPE.
8. INSTALL WITH SECURITY LID WITH BOLTS. PROVIDE OWNER WITH SIX (6) SPECIALIZED KEYS TO OPEN VANDAL RESISTANT SECURITY BOLT
9. GROUP VALVES TOGETHER AS SHOWN ON PLAN, NO MORE THAN 4 IN ONE BANK. STAKE LOCATION OF VALVE BANKS WITH DIMENSIONS OF AREA REQUIRED FOR APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.

8 L4.1 VALVE BOX LAYOUT
NOT TO SCALE



1. TRIM VALVE BOX TO PROVIDE 1" CLEARANCE OVER PIPE
2. 1/4" GALVANIZED WIRE CLOTH - INSTALL ON TOP OF CRUSHED DRAIN ROCK 6" BEYOND EDGE OF VALVE BOX IN ALL DIRECTIONS
3. REMOTE CONTROL VALVE OR MASTER VALVE ASSEMBLY WITH TWO WIRE DECODER; SIZE AND MODEL PER PLAN.
4. LOCKING WATERPROOF WIRE CONNECTOR, DBR/Y-6, SIZED FOR 2-WIRE CABLE SYSTEM.
5. PLASTIC VALVE BOX SIZED APPROPRIATELY TO ENCLOSE ENTIRE VALVE ASSEMBLY, WITH LOCK KIT AND L-BOLT, COLOR PER IRRIGATION PLANS/SPECIFICATIONS. LID MARKED IRRIGATION.
6. FINISH GRADE - SEE GRADING PLAN.
7. SET TOP OF BOX ABOVE SUBGRADE: 3-1/4" IF IN DECOMPOSED GRANITE; 1-1/2" IN TURF. SET VALVE BOX HEIGHT TO MATCH GRADE OF ADJACENT HARDSCAPE.
8. PVC LATERAL LINE; SIZE AND TYPE PER PLAN. PROVIDE 18" LENGTH PRIOR TO FIRST FITTING.
9. SCHEDULE 80 PVC UNION, TxT (TYP. 2 PLCS.)
10. SCHEDULE 80 PVC STREET ELBOW, TxT
11. 2-WIRE CABLE PER SPECIFICATIONS - PROVIDE 24" SPARE LOOP WRAPPED NEATLY ALONG INTERIOR OF VALVE BOX.
12. PVC SCHEDULE 80 NIPPLE, T.O.E. OR T.B.E. AS NEEDED, LENGTH AS NEEDED. 6" MIN. LENGTH WHERE NOTED
13. PVC MAIN LINE; SIZE AND TYPE PER PLAN. 24" MINIMUM COVER. SEE SPECIFICATIONS.
14. 3/4" CRUSHED ROCK; 6" DEPTH. EXTEND 6" BEYOND VALVE BOX IN ALL DIRECTIONS.
15. SCHEDULE 80 PVC TEE (SxSxT)
16. PVC CONDUIT, SIZE AND TYPE LARGE ENOUGH TO FIT ALL WIRES
17. PVC CONDUIT SWEEP, COUPLED BOTH ENDS. SIZE AND TYPE LARGE ENOUGH FOR ALL WIRES
18. 12" FROM HARDSCAPE
19. SAND BACKFILL; 6" ABOVE AND 6" BELOW MAIN LINE, PER SPECIFICATIONS
20. PVC SCHEDULE 80 ELBOW, SXS
21. PVC SCHEDULE 40 CONDUIT RISER, SIZED TO FIT WIRES. SOLVENT WELD COUPLERS AT CONDUIT ENDS, PROVIDE MINIMUM 2" CLEARANCE ABOVE GRAVEL
22. T.CHRISTY ID TAG MODEL ID-STD-Y2; YELLOW PRINTED WITH CONTROLLER/VALVE NUMBER ON 2 SIDES. ATTACH TAG TO VALVE STEM USING NYLON CABLE TIE.
23. GATE VALVE PER CITY OF MERCED
24. HEIGHT BELOW GRADE TO ALLOW MIN. 3" CLR FROM VALVE TO BOTTOM OF VALVE BOX LID. USE PVC 45 DEG ELBOWS DOWNSTREAM OF VALVE TO OBTAIN 18" COVER ON LATERALS.
25. TWO-WIRE DECODER

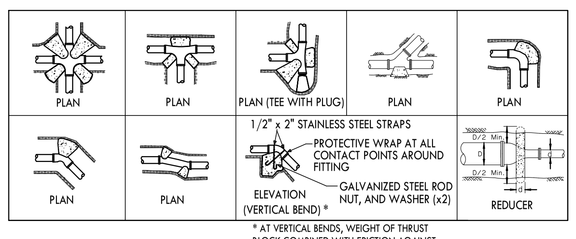
9 L4.1 REMOTE CONTROL VALVE / MASTER VALVE - TWO-WIRE, WITH GATE VALVE
NOT TO SCALE



1. NORMALLY OPEN MASTER VALVE; INSTALL DOWNSTREAM OF BACKFLOW PREVENTER PER MANUFACTURER'S SPECIFICATIONS
2. TEE MOUNTED ULTRASONIC FLOW SENSOR IN SCHEDULE 80 TEE. INSTALL AT ANGLE IF NEEDED PER MANUFACTURER'S SPECIFICATIONS.
3. 1-1/2" PVC SCHEDULE 40 CONDUIT AND FITTINGS; INSTALL 2-WIRE CABLE AND SENSOR CABLE IN CONDUIT FROM FLOW SENSOR AND MASTER VALVE TO CONTROLLER.
4. 2-WIRE MASTER VALVE DECODER; SIZE AND MODEL PER PLAN
5. 2-WIRE SENSOR DECODER; SIZE AND MODEL PER PLAN
6. CARSON 1220 RECTANGULAR VALVE BOX WITH LOCK KIT AND BOLTS (COLOR PER SPECIFICATIONS), OR APPROVED EQUAL. CONTRACTOR TO SUPPLY L-BOLTS
7. FLOW SENSOR CABLE PER MANUFACTURER'S SPECIFICATIONS
8. PVC SCHEDULE 80 NIPPLE, T.B.E.; SIZE PER VALVE SIZE, 3" MIN. LENGTH
9. PVC SCHEDULE 80 NIPPLE, T.O.E. (MACHINED); SIZE PER VALVE SIZE, 3" MIN. LENGTH
10. PVC MAIN LINE (TYPE AND SIZE PER PLAN) AND SCHEDULE 80 FITTINGS
11. PVC UNION, TxT, TO MATCH MAIN LINE SIZE
12. ATTACH VALVE ID TAG, T.CHRISTY MODEL ID-STD-Y2 TO VALVE STEM USING NYLON CABLE TIE.
13. REDUCED PIPE SIZE AS NEEDED TO ACHIEVE VELOCITY RANGE FOR FLOW SENSOR TO MEASURE ACCURATELY
14. PVC SCHEDULE 80 REDUCER COUPLINGS (S X S), SIZE PER PIPE SIZE

* OR MIN. LENGTH AS SPECIFIED BY FLOW SENSOR MANUFACTURER

10 L4.1 MASTER VALVE/FLOW SENSOR ASSEMBLY - 2-WIRE
N.T.S.



* AT VERTICAL BENDS, WEIGHT OF THRUST BLOCK COMBINED WITH FRICTION AGAINST UNDISTURBED SOIL MUST BE EQUAL TO OR GREATER THAN POUNDS OF THRUST AT BEND

INSTALLATION NOTES

1. ALL MAIN LINE SHALL BE INSTALLED AND TESTED ACCORDING TO PIPE MANUFACTURER'S SPECS, WHICH SHALL BE A PART OF THE INSTALLATION SPECIFICATIONS.
2. THRUST BLOCKS ARE REQUIRED FOR ALL PIPES 2" AND LARGER AT TEES, WYES, AND CROSSES, AND WHENEVER PIPE CHANGES DIRECTION (22-1/2 - 90 DEGREES), CHANGES SIZE, OR DEAD ENDS.
3. ALL THRUST BLOCKS SHALL BE CONCRETE POURED IN PLACE BETWEEN THE FITTING AND UNDISTURBED TRENCH WALL. NO BACKFILL ALLOWED BETWEEN UNDISTURBED NATIVE MATERIAL AND THRUST BLOCK.
4. THE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI. ALL CEMENT SHALL BE PORTLAND CEMENT, TYPE II, WITH A MINIMUM OF 5 SACKS OF CEMENT TO EACH CUBIC YARD OF CONCRETE.
5. CONCRETE SHALL BE KEPT CENTERED ON FITTING AND NOT OBSTRUCT CONNECTIONS BETWEEN PIPE AND FITTINGS.
6. WRAP PVC PIPE FITTINGS IN FILTER FABRIC AT POINT OF CONTACT WITH THRUST BLOCKS PRIOR TO POURING CONCRETE TO PROTECT PIPE FROM WEAR. PROVIDE SUBMITTAL OF MATERIAL TO LANDSCAPE ARCHITECT.
7. CONCRETE THRUST BLOCKS SHALL BE ALLOWED TO CURE LONG ENOUGH SO THAT MAIN LINE PRESSURE TESTING DOES NOT DAMAGE THEM. AND INSPECTION BY LANDSCAPE ARCHITECT SHALL OCCUR PRIOR TO BACKFILLING. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGED THRUST BLOCKS.
8. FOR DESIGN PRESSURES GREATER THAN 150 PSI, THRUST BLOCK DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED FOR APPROVAL.

11 L4.1 THRUST BLOCK CONFIGURATION
N.T.S

SIZING OF THRUST BLOCKS:
THE SIZE OF THE THRUST BLOCK IS DETERMINED BY THE WORKING PRESSURE, THE SIZE AND TYPE OF FITTING, AND SOIL CONDITIONS AT THE JOB SITE. TO CALCULATE THE AREA OF CONTACT WITH UNDISTURBED NATIVE SOIL, FOLLOW THESE STEPS:

1. CALCULATE THE TOTAL THRUST BY SELECTING THRUST /100 BY SIZE AND TYPE OF FITTING FROM TABLE 1 AND MULTIPLYING THRUST /100 BY SYSTEM PRESSURE DIVIDED BY 100.

$$\frac{\text{"THRUST / 100" FROM TABLE 1 x SYSTEM PRESSURE}}{100} = \#\text{ LBS THRUST}$$

2. DIVIDE THE TOTAL THRUST BY THE BEARING CAPACITY OF THE SOIL IN EXCAVATION (FROM TABLE 2) TO DETERMINE THE AREA (IN SQUARE FEET) OF THRUST BLOCK REQUIRED TO BE IN CONTACT WITH THE UNDISTURBED SOIL.

$$\frac{\#\text{ LBS THRUST}}{\text{SOIL BEARING CAPACITY}} = \text{S.F. OF THRUST BLOCK CONTACT AREA}$$

TABLE 1 - THRUST /100 TABLE (POUNDS PER 100 PSI)*				
SIZE	TEE, PLUGS	90° BENDS	45° BENDS	22-1/2° BENDS
2"	363	513	259	141
2-1/2"	531	751	379	207
3"	788	1114	562	307
4"	1302	1841	928	508

EXAMPLE: 2" PIPE 90° BEND, SYSTEM PRESSURE 120 PSI, TRENCH IS SOFT CLAY:
513 LBS x 120 PSI / 100 = 615.6 LBS

615.6 LBS / 1000 PSF = 0.62 SF OF CONTACT AREA

**FOR REDUCERS, SUBTRACT SMALL OPENING PLUG THRUST FROM LARGE OPENING PLUG THRUST TO CALCULATE THRUST /100.

TABLE 2 - SOIL BEARING CAPACITY	
SOIL TYPE	SAFE BEARING LOAD LBS PER SQ FT*
Soft Clay	1000
Sand	2000
Sand and Gravel	3000
Sand and Gravel cement w/ Clay	4000
Hard Pan	10000

*WHEN DOUBT EXISTS, SOIL BEARING TESTS SHOULD BE SPECIFIED. THE BEARING LOADS GIVEN ARE FOR HORIZONTAL THRUST WHEN DEPTH OF COVER EXCEEDS 2 FT.

MDG
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meltondg.com

LICENSE

REGISTERED LANDSCAPE ARCHITECT GREG MELTON #3210 EXP. 11-26 STATE OF CALIFORNIA

CONSULTANT

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

IRRIGATION DETAILS

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
4.		
5.		
6.		
7.		
8.		

PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

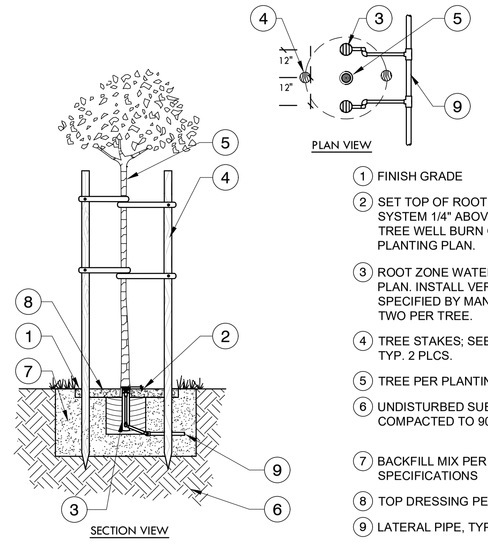
SHEET NUMBER

L4.1

SHEET 27 OF 31

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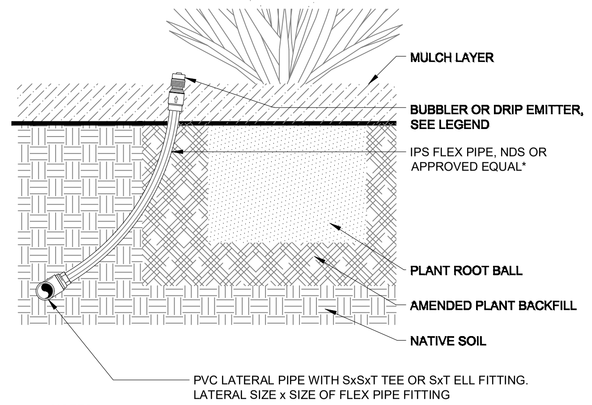
Page 32 of 412
FILE NAME: G:\MDG\2600-2699\2615 General Vang Pao Park AP and Playground\2615 CAD\CDs\SHEETS\2615-L4.1-IRRG-DETS.dwg
PLOT DATE: February 26, 2026 - 7:13 PM



1. FINISH GRADE
2. SET TOP OF ROOT ZONE WATERING SYSTEM 1/4" ABOVE FINISH GRADE IN TREE WELL BURN OUT ZONE. SEE PLANTING PLAN.
3. ROOT ZONE WATERING SYSTEM PER PLAN. INSTALL VERTICALLY AND AS SPECIFIED BY MANUFACTURER. INSTALL TWO PER TREE.
4. TREE STAKES; SEE PLANTING PLAN. TYP. 2 PLCS.
5. TREE PER PLANTING PLAN
6. UNDISTURBED SUBGRADE OR COMPACTED TO 90% RELATIVE DENSITY.
7. BACKFILL MIX PER LANDSCAPE SPECIFICATIONS
8. TOP DRESSING PER PLANTING PLAN
9. LATERAL PIPE, TYPE AND SIZE PER PLAN

1 L4.2 ROOT ZONE WATERING SYSTEM - 2 PER TREE

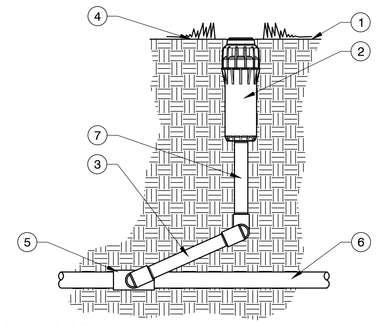
N.T.S.



NOTES:
1. ALL FLEXIBLE SUPPLY TUBING SHALL BE IPS OR APPROVED EQUAL, PER CITY OF MERCED
2. INSTALL BUBBLER/ EMITTER INSIDE OF PLANT WATERING BASIN ADJACENT TO ROOTBALL. INSTALL ON UPHILL SIDE OF PLANT WHERE APPLICABLE
3. * CONTRACTOR MAY INSTALL IPS FLEX PIPE CONNECTIONS TO OTHER ADJACENT SHRUBS. OVERALL LENGTH SHALL BE WITHIN REASON TO MAINTAIN PROPER PRESSURE TO EMITTERS AT END OF FLEX PIPE RUN.
4. APPLY NON-HARDENING TEFLON PIPE SEALANT ON ALL THREADED CONNECTIONS WHERE REQUIRED BY MANUFACTURER

2 L4.2 SHRUB EMITTER ON FLEXIBLE IPS RISER

NOT TO SCALE



1. FINISH GRADE
2. GEAR DRIVEN ROTOR OR ROTATOR PER PLANS AND SPECIFICATIONS
3. TRIPLE SWING ASSEMBLY: KBI MODEL TSA-1000-TT OR APPROVED EQUAL THAT MATCHES INLET SIZE OF SPRINKLER.
4. SET TOP OF SPRINKLER ABOVE FINISH GRADE: 5/8" IN SOD, 1-1/4" IN DECOMPOSED GRANITE, FLUSH WITH ADJACENT HARDSCAPE. INSTALL PERPENDICULAR TO GRADE, 1" MIN. - 2" MAX. SPACING FROM HARDSCAPE.
5. PVC SCHEDULE 40 LATERAL TEE S X S X T
6. PVC LATERAL PIPE
7. PVC SCHEDULE 80 NIPPLE (T.B.E.); LENGTH AS NEEDED

3 L4.2 POP-UP ROTOR / ROTATOR

NOT TO SCALE

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LICENSE

REGISTERED LANDSCAPE ARCHITECT
GREG MELTON #3217
EXP. 11-26
STATE OF CALIFORNIA

CONSULTANT

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

IRRIGATION DETAILS

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
4.		
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7.		
8.		

PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

SHEET NUMBER

L4.2

SHEET 28 OF 31

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PLOT DATE: February 26, 2026 - 7:13 PM
FILE NAME: G:\MDG\2600-2699\2615 General Vang Pao Park MP and Playground\2615 CAD\CDs\SHEETS\2615-L4.1-IRRG-DETS.dwg

WATER USE BUDGET

GENERAL VANG PAO MEMORIAL
MERCED, CA

Water Budget Calculation

Maximum Applied Water Allowance (MAWA) - Annual Water Allowed (Gallons)

MAWA = (Eto) (0.62) [(ETAF x LA) + ((1-ETAF) x SLA)]

MAWA = 713,091 Gallons per Year

Where:
50.3 = Eto (In/Year) CIMIS Station 012, Durham CA
0.45 = ETAF (ET Adjustment Factor/NonResidential)
(1.0 - 0.45) = ETAF SLA (ET Adjustment Factor/Special Landscape Area)
28,286 = LA (Total Landscape Area - Square Feet)
18,431 = SLA (Special Landscape Area - Square Feet)
0.62 = Conversion Factor (Inches to Gallons)

Estimated Total Water Use (ETWU) - Annual Water Required (Gallons)

ETWU = (Eto) (0.62) (ETAF) (HA)

ETWU = 546,767 Gallons per Year

Where:
ETWU = Estimated Total Water Use - Hydrozone 1-3
EWU = Estimated Water Use per Hydrozone
50.3 = Eto (In/Year) CIMIS Station 012, Durham CA
ETAF = Plant Factor/Irrigation Effiency
PF = Plant Factor per Hydrozone
IE = Irrigation Efficiency per Hydrozone
HA = Area (S.F.) per Hydrozone
0.62 = Conversion factor (inches to gallons)

Hydrozone 1; Low water use shrubs, grasses, etc.; emitters				PR= 0.29
PF =	0.2			
HA =	8,420 (square feet)	0.1933 acres		
IE =	0.81			
EWU =	64,836 (gallons per year)	0.19897 acre-feet/year		86.6793 ccf/year

Hydrozone 2; Medium water use trees; RWS bubblers (0.25 gpm)				PR= 0.5
PF =	0.4			
HA =	1,435 (square feet)	0.03294 Acres		
IE =	0.81			
EWU =	22,100 (gallons per year)	0.06782 acre-feet/year		29.5451 ccf/year

Hydrozone 3; (SLA) Medium water use turf; rotator				PR= 0.45
PF =	0.6			
HA =	18,431 (square feet)	0.42312 Acres		
IE =	0.75			
EWU =	459,831 (gallons per year)	1.41117 acre-feet/year		614.748 ccf/year

Hydrozone 1-3 Total			
ETWU =	**546,767** (gallons per year)	1.67797 Acre-Feet per Year	
	731 (100 cubic feet per year)	0.01678 Acres	

IRRIGATION SCHEDULE--ESTABLISHMENT

GENERAL VANG PAO MEMORIAL
MERCED, CA

System Capacity:
Minimum daily water required to irrigate landscape within set water window

Where:
27,154 = Gallons per Acre-Inch
LA = Landscape Area (Acres)
43,560 = Square Feet per Acre
Eto = Reference Evapotranspiration (Inches/Year)
0.75 = Irrigation Efficiency (IE) - Rotors, Rotators, Spray
0.81 = Irrigation Efficiency (IE) - Bubblers, Surface Drip
0.81 = Irrigation Efficiency (IE) - Sub-surface Drip
HR = Irrigation Window (Hours per Day)
60 = Minutes per Hour

Project Reference Evapotranspiration (Eto)
50.3 = Eto (In/Year) CIMIS Station 012, Durham CA
0.31 = Historical Daily Peak ETo (Worst Case)

Project Soil Type: Wyman Series Silt - Clay Loam (From Soilweb)
Soil Infiltration Rate: 0.4

Irrigated Landscape Area
28,286 = Total Irrigated Landscape Area (Square Feet)
0.65 = Total Irrigated Landscape Area (Acres)

Irrigation Window
10 Hours per Day

System Capacity (Worst Case)
SC = (27,154) (LA) (ETo / IE) / (HR) (60)
SC = 12.1 GPM

GENERAL VANG PAO MEMORIAL
MERCED, CA

Monthly Irrigation Schedule - Establishment
Irrigation Window = 10 Hours

Hydrozone 1; Low water use shrubs, grasses, etc.; emitters PR= 0.29

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MIN / WEEK	19	31	48	63	84	89	87	80	61	43	24	13
DAYS / WEEK	2	2	2	3	3	3	4	4	4	3	2	2
MIN / WATER DAY	10	16	24	21	28	30	22	20	15	14	12	6
CYCLE / DAY	1	1	1	1	1	1	1	1	1	1	1	1
MIN / CYCLE	10	16	24	21	28	30	22	20	15	14	12	6
GAL / MONTH	1,947	3,180	4,803	6,360	8,437	9,021	8,827	8,048	6,166	4,348	2,401	1,298
C.F. / MONTH	260	425	642	850	1,128	1,206	1,180	1,076	824	581	321	174

Hydrozone 2; Medium water use trees; RWS bubblers (0.25 gpm) PR= 0.45

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MIN / WEEK	22	37	55	55	97	104	101	92	71	50	28	15
DAYS / WEEK	2	2	3	3	3	4	5	4	3	3	3	2
MIN / WATER DAY	11	18	18	18	32	26	20	23	24	17	9	7
CYCLE / DAY	1	1	1	2	2	2	2	2	2	1	1	1
MIN / CYCLE	11	18	18	9	16	13	10	12	12	17	9	7
GAL / MONTH	680	1,111	1,677	1,677	2,947	3,151	3,083	2,811	2,153	1,519	839	453
C.F. / MONTH	91	148	224	224	394	421	412	376	288	203	112	61

Hydrozone 3; (SLA) Medium water use turf; rotator PR= 0.45

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MIN / WEEK	40	66	99	131	174	186	182	166	127	90	50	27
DAYS / WEEK	3	3	3	4	4	5	6	6	4	3	3	3
MIN / WATER DAY	13	22	33	33	44	37	30	28	32	30	17	9
CYCLE / DAY	1	1	2	2	2	2	2	2	2	2	1	1
MIN / CYCLE	13	22	17	16	22	19	15	14	16	15	17	9
GAL / MONTH	13,809	22,554	34,062	45,109	59,838	63,981	62,600	57,076	43,728	30,840	17,031	9,206
C.F. / MONTH	1,846	3,015	4,554	6,031	8,000	8,554	8,369	7,631	5,846	4,123	2,277	1,231

IRRIGATION SCHEDULE--MATURE

GENERAL VANG PAO MEMORIAL
MERCED, CA

Monthly Irrigation Schedule - Mature
Irrigation Window = 10 Hours

Hydrozone 1; Low water use shrubs, grasses, etc.; emitters PR= 0.29

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MIN / WEEK	19	31	24	31	84	89	87	80	61	43	24	13
DAYS / WEEK	1	1	2	2	3	3	3	3	2	2	1	1
MIN / WATER DAY	19	31	12	16	28	30	29	27	31	22	24	13
CYCLE / DAY	1	1	1	1	1	1	1	1	1	1	1	1
MIN / CYCLE	19	31	12	16	28	30	29	27	31	22	24	13
GAL / MONTH	2,130	3,480	2,628	3,480	9,232	9,871	9,658	8,806	6,746	4,758	2,628	1,420
C.F. / MONTH	285	465	351	465	1,234	1,320	1,291	1,177	902	636	351	190

Hydrozone 2; Medium water use trees; RWS bubblers (0.25 gpm) PR= 0.5

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MIN / WEEK	22	37	55	73	97	104	101	92	71	50	28	15
DAYS / WEEK	1	1	1	2	2	2	2	2	2	1	1	1
MIN / WATER DAY	22	37	55	37	48	52	51	46	35	50	28	15
CYCLE / DAY	1	2	3	3	3	3	3	3	2	3	3	1
MIN / CYCLE	22	18	18	12	16	17	17	15	18	17	9	15
GAL / MONTH	664	1,084	1,637	2,168	2,876	3,075	3,009	2,743	2,102	1,482	819	442
C.F. / MONTH	89	145	219	290	384	411	402	367	281	198	109	59

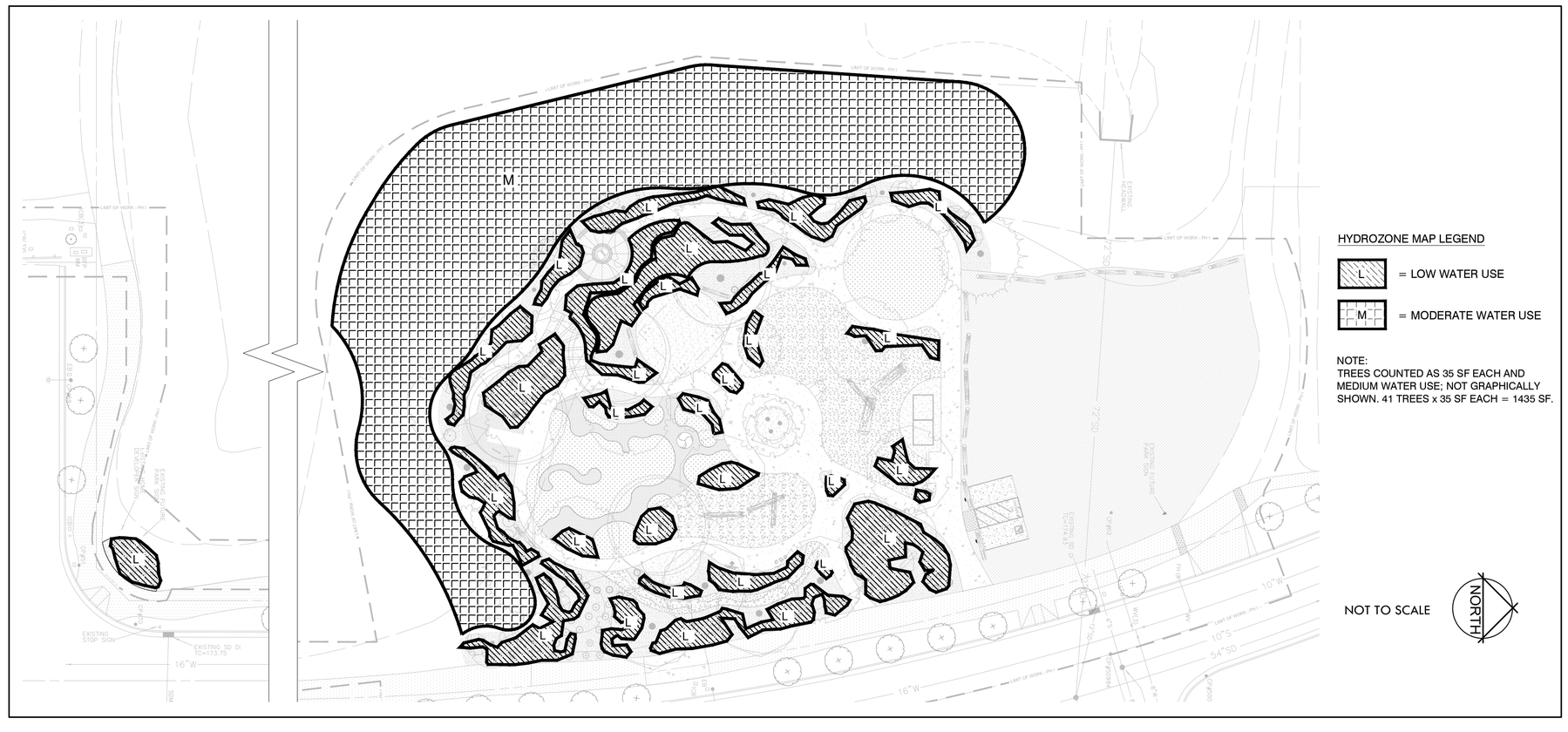
Hydrozone 3; (SLA) Medium water use turf; rotator PR= 0.45

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MIN / WEEK	40	66	99	131	174	186	182	166	127	90	50	27
DAYS / WEEK	2	2	3	3	4	4	5	5	4	3	2	2
MIN / WATER DAY	20	33	33	44	44	47	36	33	32	30	25	13
CYCLE / DAY	1	1	1	2	2	2	2	1	1	1	1	1
MIN / CYCLE	20	33	33	22	22	23	18	33	32	30	25	13
GAL / MONTH	0	0	0	0	0	0	0	0	0	0	0	0
C.F. / MONTH	0	0	0	0	0	0	0	0	0	0	0	0

HYDROZONE INFORMATION TABLE

HYDROZONE	WATER USE, PLANT & IRRIGATION TYPE	WUCOLS PLANT FACTOR (PF)	HYDROZONE AREA (HA) (SQUARE FEET)	PF X HA (SQUARE FEET)
1	LOW - SHRUB EMITTERS	0.2	8420	1684.00
2	MODERATE - TREES BUBBLER	0.4	1435	574.00
3	MODERATE - ROTATORS	0.6	18431	11059
		SUM	28286	13317.00

HYDROZONE MAP



LANDSCAPE DOCUMENTATION NOTES

1. UPON APPROVAL OF THE LANDSCAPE DOCUMENTATION PACKAGE, SUBMIT A COPY OF THE WATER EFFICIENT LANDSCAPE WORKSHEET TO THE LOCAL WATER PURVEYOR.

2. "I HAVE COMPLIED WITH THE CRITERIA OF THE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN AND IRRIGATION DESIGN PLANS."
SIGNED _____
PRINTED NAME:

3. UPON COMPLETION PROVIDE CERTIFICATION BY EITHER THE SIGNER OF THE LANDSCAPE DESIGN PLAN, THE SIGNER OF THE IRRIGATION DESIGN PLAN, OR THE LICENSED LANDSCAPE CONTRACTOR THAT THE LANDSCAPE PROJECT HAS BEEN INSTALLED PER THE APPROVED LANDSCAPE DOCUMENTATION PACKAGE.

LANDSCAPE CERTIFICATE OF COMPLETION

Certificate of Completion

A. Project Information

Date _____
Project Name _____
Project Street Address, City and Zip _____
Parcel or Lot Number(s) (if available) _____

Applicant Name _____
Applicant Job Title _____
Applicant Company Name _____
Phone Number _____
Email Address _____
Street Address, City and Zip _____

Property Owner Name _____
Phone Number _____
Email Address _____
Street Address, City and Zip _____

Property Owner:

"I/we certify that I/we have received copies of all the documents within the Landscape Documentation Package and the Certificate of the Completion and that it is my/our responsibility to see that the project is maintained in accordance with the Landscape and Irrigation Maintenance Schedule."

_____
Property Owner Date

B. Certificate of Installation

To be signed by the signer of the Landscape Design Plan or the Irrigation Design Plan or by the licensed landscape contractor

"I/we certify that based upon periodic site observations, the work has been completed in accordance with the ordinance and that the landscape planting and irrigation installation conform with the criteria and specifications of the approved Landscape Documentation Package. As-built drawings have been provided to document any major modifications of the approved Landscape Documentation Package. Significant changes made during construction comply with the ordinance."

Contractor/Professional Signature _____
Date _____
Print Name _____
License Number _____

C. Additional Modifications

Applicant: If major modifications were made in construction from the submitted plans, attach record drawings (as-builts)

☐ No major modifications
☐ As-builts attached, including a revised Water Efficient Landscape Worksheet

MDG
MELTONDESIGNGROUP
820 BROADWAY ST.
CHICO, CA 95928
(530) 899-1616
meltondg.com

LICENSE

REGISTERED LANDSCAPE ARCHITECT
GREG MELTON #2717
EXP. 11-26
STATE OF CALIFORNIA

CONSULTANT

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

IRRIGATION CALCULATIONS

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
4.		
5.		
6.		
7.		
8.		

PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

SHEET NUMBER

L4.3

SHEET 29 OF 31

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PLOT DATE: February 26, 2026 - 7:14 PM
FILE NAME: G:\MDG\2600-2699\2615 General Vang Pao Park AP and Playground\2615 CAD\CDs\SHEETS\2615-L4.2-IRRG-CALCS.dwg
Page 54 of 412



LIGHTING SCHEDULE (ALTERNATES)

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	DETAIL
	CRYSTAL STUD LIGHT - FONROCHE BID ALTERNATE MODEL # CRYSTAL STUD-PLRE6-3000K COLOR: SABLE	14	2/E5.1
	BOLLARD BRUT - FONROCHE BID ALTERNATE MODEL # BRUT-BOLLARD-2700K-3W COLOR: SABLE	6	3/E5.1
	BELLE EPOQUE SINGLE - FONROCHE BID ALTERNATE MODEL # T4-BEPOQUE-3000K-19W 20' ROUND TAPERED POLE - DIRECT BURY COLOR: SABLE	5	1/E5.1

LIGHTING NOTES

1. EXISTING UNDERGROUND UTILITIES SHOWN PER OWNER SURVEY AND AS-BUILTS. OBTAIN AND CONFIRM FROM SURVEY AND AS-BUILTS.
2. VERIFY EXACT LOCATION AND STATE OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO THE START OF WORK.
3. THIS DRAWING IS DIAGRAMMATIC, LIGHTING COMPONENTS SHOWN BENEATH PAVING OR PLANTINGS IS FOR GRAPHIC CLARITY ONLY. RUN ALL WIRING IN TRENCHES AND ALONG WALK WHERE POSSIBLE.
4. ALL ELECTRICAL WORK SHALL BE COMPLETED BY A LICENSED ELECTRICAL CONTRACTOR AND SHALL COMPLY TO ALL APPLICABLE PROVISIONS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND STATE AND LOCAL CODES AND REGULATIONS.
5. PROVIDE AS-BUILTS FOR WIRING PATHS.
6. CONTRACTOR IS RESPONSIBLE TO COORDINATE HIS WORK WITH THE WORK OF OTHERS.
7. RUN ALL 120 V WIRE AS PER 2021 NEC AND ALL APPLICABLE LOCAL CODES.
8. VERIFY ALL LOCATIONS OF LIGHTS WITH LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
9. USE SPEARS DS-400 PRE-FILLED DRI-SPLICE CONNECTOR WITH CRIMP SLEEVE FOR ALL WIRE SPLICES.
10. INSTALL PER CITY OF MERCED STANDARD DETAILS AND SPECIFICATIONS, IF APPLICABLE.
11. ENSURE COMPLIANCE WITH ALL FIRE DEPARTMENT REQUIREMENTS.

GENERAL NOTES

1. PROVIDE COPPER CONDUCTORS. CONDUCTOR SIZES INDICATED ARE BASED ON COPPER CONDUCTORS. DO NOT PROVIDE CONDUCTORS SMALLER THAN THOSE INDICATED. CONDUCTORS SHALL BE STRANDED THWN (WET) OR THHN (DRY), EXCEPT SOLID CONDUCTORS MAY BE USED FOR 15-, 20-, AND 30- AMP BRANCH CIRCUITS.

2. USE RIGID POLYVINYL CHLORIDE (PVC) SCHEDULE 40 CONDUIT FOR BURIED AND EMBEDDED RACEWAYS.

3. USE GALVANIZED RIGID STEEL CONDUIT (GRS) OUTDOORS AND IN WET LOCATIONS.

4. USE ELECTRICAL METALLIC TUBING (EMT) IN CONCEALED LOCATIONS AND EXPOSED, INTERIOR, DRY LOCATIONS, AND WHERE MORE THAN 6 FEET ABOVE FINISH FLOOR.

NORTH

0 20 40

SCALE: 1" = 20'
@30x42

Know what's BELOW
CALL before you dig.

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REGISTERED LANDSCAPE ARCHITECT
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EXP. 11-26
STATE OF CALIFORNIA

CONSULTANT

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

ELECTRICAL PLAN

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
3.	BID SET	2026-02-27
4.		
5.		
6.		
7.		
8.		

PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

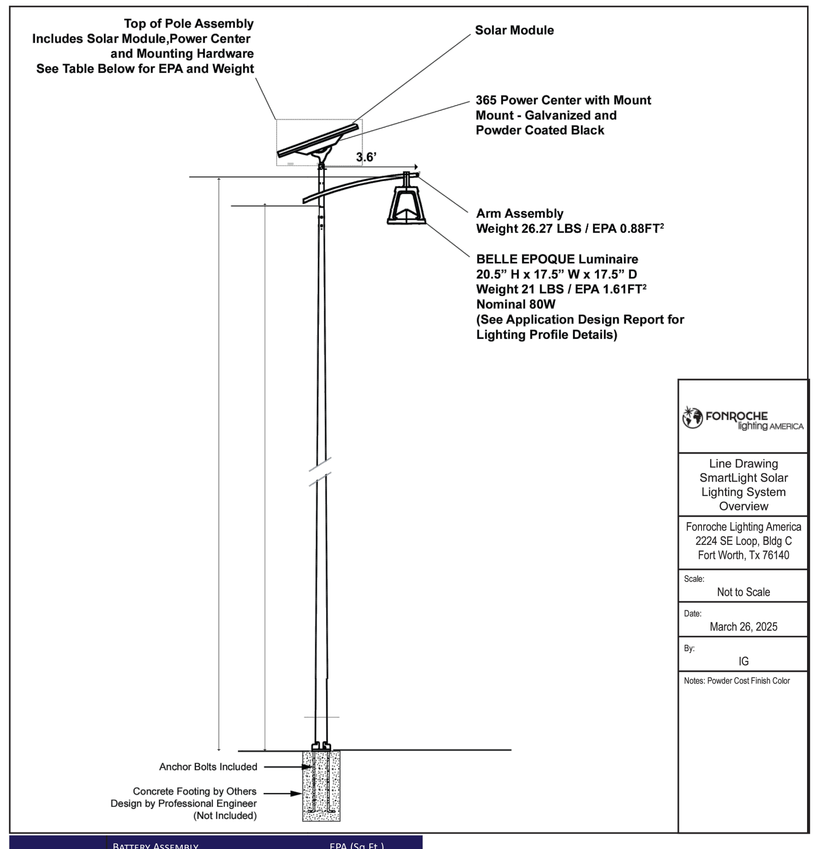
SHEET NUMBER

E5.0

SHEET 30 OF 31

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PAGE 56 of 412
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PLOT DATE: February 26, 2026 - 7:14 PM



Solar Assembly	Battery Assembly 2P	3P	4P	6P	EPA (Sq.Ft.): 10° Tilt	45° Tilt
P190F-HW-MC	113.76	124.34	134.93	130.52	2.82	9.32
P310F-HW-MC	131.40	141.98	152.57	148.16	3.98	14.19
P410F-HW-MC	136.25	146.83	157.42	153.00	4.88	17.13

FONROCHE lighting AMERICA

[Belle - - -]-[- -]- -

Fixture | Temp | Type | Solar | Power Center | Option

20' ROUND TAPERED POLE - DIRECT BURY - SABLE - SABLE

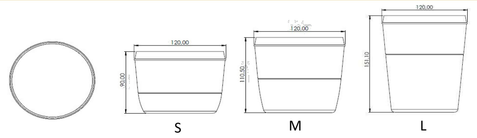
Pole | Color (Pole) | Color (Fixture) | Tilt Panel

1 E5.1 BELLE EPOQUE SINGLE
NTS

nowatt

TECHNICAL DATA SHEET
April 2025

Crystal stud



PHOTOVOLTAIC PANEL	
Total number of Photovoltaic panels	1
Watt-peak power	0,66 Wp
Cell technology	Monocrystalline Cells
Types of cells	Sunpower Back Contact
Lifespan	> 25 years
Surface area of the PV (in cm²)	31,5 cm²
Efficiency	25%
BATTERY	
Chemistry	LiFePO4
Nominal voltage (in V)	3,2
Capacity (in Ah)	4,5
Lifespan	15 years
LIGHTING FIXTURE	
Luminous flux	5 lm
LED colors	RGB colors + 3000K white or RGB colors + amber
CRI of the white LED	≥ 80
Ingress Protection (IP) rating	IP67
Impact resistance rating IK	IK07
STRUCTURE	
Chassis materials	Glass
Weight (in kg)	1,25 kg
Thickness	25 mm thick on aluminum tube
Dimensions	120 × 90 mm (S) – 120 × 110 mm (M) – 120 × 150 mm (L)
Operating temperatures	-10°C / +60°C

LIGHTING PROFILE

SCENARIO 1 : rainbow chain.
SCENARIO 2 : rainbow fade.
SCENARIO 3 : monochrome candle light (color of choice).
SCENARIO 4 : monochrome (color of choice).
SCENARIO 5 : rainbow flash (choice of number of flashes per second).
SCENARIO 6 : rainbow wave.
SCENARIO 7 : monochrome flash (color of choice + choice of number of flashes per second).
SCENARIO 8 : monochrome wave.

Other scenarios available upon request.

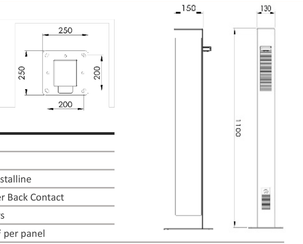
www.fonroche-lighting.com | +33 (0)5 53 77 97 41 | contact@fonroche-lighting.com

2 E5.1 CRYSTAL STUD
NTS

nowatt

DATA SHEET
June 2025

Bollard BRUT

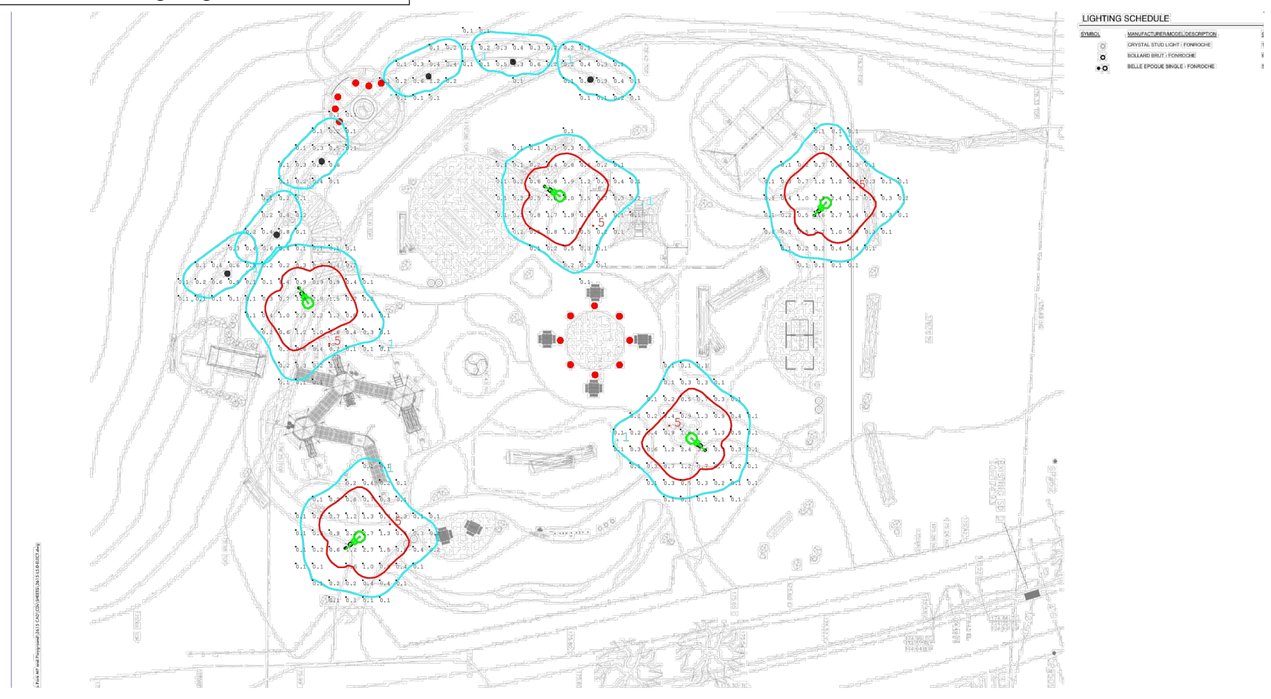


PHOTOVOLTAIC MODULE	
Phovoltaic Module	2
Nominal Power (Wp)	52 Wp
Cell Technology	Monocrystalline
Cell Type	Sunpower Back Contact
Lifespan	> 25 years
PV Surface Area	1267 cm² per panel
Material and Finish	ETFE – Anti-Abrasion – Anti-Graffiti – Anti-Vandalism
BATTERY	
Chemistry	LiFePO4 (Lithium Iron Phosphate)
Nominal Voltage	9.6 V
Capacity	7.7 Ah
Energy	76.8 Wh
Charge Cycles	8000 cycles at 55% DOD
Waterproofing	Battery and board are waterproof and submersible
Lifetime	15 years
LUMINAIRE	
Nominal Power & Luminous Efficacy	5 W – 170 lm/W @ 3000K
Color Temperature	Amber – 2200K – 2700K – 3000K
Photometric Distribution	Type I – Ultra wide
CRI	≥70
Luminaire Material	Solid machined and black anodized aluminum
Optical Material	Polycarbonate
Protection Rating (IP) – (IK)	IP66 – IK10
Dual Functionality	Lighting and RGB Marking
ULR	0
LIGHTING PROFILE	
Lighting Profile	Adaptable throughout the night
STRUCTURE	
Dimensions (mm)	150 x 130 x 1100 mm
Frame Material	Ultra-High Performance Fiber-Reinforced Concrete (UHPFRC) Water-repellent treatment
Base Plate Material	Galvanized Steel S235
Weight	37 kg
Shock Resistance Index (IK)	IK10
Recommended Foundation Size (mm)	400 x 400 x 400 mm
Anchor Rod Dimensions	M14
Base Plate Dimensions (mm)	250 x 250 mm
Mounting Hole Spacing (mm)	200 mm
GENERAL	
Minimum Autonomy	365 nights per year
Functionality	Bluetooth
Fasteners	Stainless Steel A2 – Tamper-proof
Presence Sensor	PIR (Infrared) – Optimal 180° detection

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3 E5.1 BOLLARD BRUT
NTS

Merced CA - General Vang Pao		FONROCHE lighting AMERICA
Lighting Plan Rev C Project Number: G9820	By: Michael Zermani michael.zermani@fonroche.us Date:2/6/2026	2224 SE Loop 820, Building C Fort Worth, TX 76140 Phone Number: (339) 225 4530 www.fonrochesolarlighting.com



Luminaire Schedule					
Symbol	Qty	Label	Arrangement	Luminaire Watts	Arm
	6	BRUT-Bollard-2700K-3W	Single	3	0
	14	CrystalStud-PLRE6-3000K	Single	1	0
	5	T4-BEpoque-3000K-19W	SINGLE	19	3.6

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
General Vang Pao	Illuminance	Fc	0.46	3.0	0.1	4.60	30.00

4 E5.1 PHOTOMETRICS
NTS

820 BROADWAY ST.
CHICO, CA 95928
(530) 899-1616
meltondg.com

LICENSE

REGISTERED LANDSCAPE ARCHITECT
GREG MELTON #3211
EXP. 11-26
STATE OF CALIFORNIA

CONSULTANT

CLIENT

CITY OF MERCED

PROJECT

GENERAL VANG PAO MEMORIAL PARK - PHASE I

SHEET TITLE

ELECTRICAL DETAILS

DATES

NO.	DESCRIPTION	DATE
1.	65% REVIEW	2025-11-17
2.	95% REVIEW	2026-02-16
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PROJECT NUMBERS

MELTON DESIGN GROUP: 2615
CONSULTANT: CP240049

SHEET NUMBER

E5.1

SHEET 31 OF 31

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Page 56 of 412

EXHIBIT “B” - DRAWINGS AND TECHNICAL SPECIFICATIONS

SCOPE OF WORK

The Work to be performed is included in Exhibit B – Drawings and Technical Specifications. Such other items or details, not mentioned above (Exhibit A), that are required by the drawings, and technical specifications, or the following special conditions (Exhibit C) shall be performed, placed, constructed or installed.

PERFORMANCE

The Contractor shall furnish all labor, materials, tools, equipment, incidentals, and do all work described in the Plans and these Special Provisions.

COORDINATION/COOPERATION

The Contractor shall notify the Engineer at (209) 385-6846 at least three (3) working days in advance of the tentative starting date.

The Contractor shall be responsible for contacting and coordinating with all utility companies, including the City, with regards to the location of existing underground facilities in the construction area. The Contractor shall call Underground Service Alert at (800) 642-2444, at least 2 working days before commencement of underground work for location of underground facilities.
Utility facilities damaged, temporarily disconnected, or relocated as a result of construction shall be repaired/reconnected as directed by the governing utility at the Contractor's expense.
Full compensation for conforming to the requirements of this section shall be considered as included in the price paid for the various contract items of work involved and no additional compensation will be made.

INSPECTION OF SITE

The Contractor shall inspect the work site and note all existing conditions before submitting a bid for this project. A site tour is scheduled immediately following the pre-bid/LBE meeting if requested.

DUST CONTROL

It shall be the responsibility of the Contractor to minimize dust during earth moving operations. A water truck shall be made available if necessary for dust control.

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

PERMITS, BONDS, LICENSES AND INSURANCE

The Contractor shall procure all permits, bonds, licenses and insurance, pay all charges and fees, and give all notices necessary and incidental to the prosecution of the work.

Payment for "Permits, Bonds, Licenses and Insurance," shall be at the contract lump sum price as set forth in the proposal, and shall include all fees associated with permits, bonds, licenses, inspections, and all other fees necessary for the completion of this item.

PUBLIC CONVENIENCE AND SAFETY

The Contractor shall be responsible for all the provisions of this item, including issuance of all notices necessary for prosecution of the work.

Construction Area Signs -- Construction area signs and traffic cones shall be furnished, installed, maintained, and removed when no longer required in accordance with the provisions in Section 12, "Temporary Traffic Control," of the State Specifications, and these Special Provisions. Specifically included in this item are all detour signage.
The Contractor shall notify the appropriate regional notification center for operators of subsurface installations at least two (2) working days, but not more than 14 calendar days, prior to commencing any excavation for construction area sign posts. The regional notification centers include, but not limited to the following:

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

All excavations required to install construction area signs shall be performed by hand methods without the use of power equipment, except that power equipment may be used if it is determined that there were no utility facilities in the area of the proposed post holes.

Sign substrates for stationary mounted construction area signs may be fabricated from fiberglass reinforced plastic as specified under “Prequalified and Tested Signing and Delineation Materials” elsewhere in these Special Provisions.

Type IV reflective sheeting for sign panels for portable construction area signs shall conform to the requirements specified under “Prequalified and Testing Signing and Delineation Materials” elsewhere in these Special Provisions.

The term “construction area signs” shall also include temporary object markers required for the direction of public traffic through or around the work during construction. Object markers listed or designated on the plans as construction area signs shall be considered to be signs and shall be furnished, erected, maintained and removed by the Contractor in the same manner specified for construction area signs and the following:

Object markers shall be stationary mounted on wood or metal posts in accordance with the details shown on the plans and the requirements in Section 82, “Markers and Delineators,” of the Standard Specifications.

Marker panels for Type N, Type P and Type R object markers shall conform to the requirements for sign panels for stationary mounted signs.

Target plates for Type K and Type L object markers and posts, reflectors and hardware shall conform to the requirements in said Section 82, but need not be new.

When a street section is to be closed, it shall be solidly barricaded, and signs shall be posted at the closure points indicating “Street Closed.”

Full cost of providing and removing construction area signs shall be borne exclusively by the Contractor and shall be considered as included in the contract lump sum price for Item 10-1.07, “Public Convenience & Safety.”

Maintaining Traffic -- Attention is directed to Section 7-1.03, "Public Convenience," Section 7-1.04, "Public Safety," and Section 12, "Temporary Traffic Control," of the State Specifications. Nothing in these Special Provisions shall be construed as relieving the Contractor from its responsibility as provided in Section 7-1.04 of the State Specifications.
All traffic cones used for night lane closures shall have reflective cone sleeves as specified in the specifications. One (1) 12-foot wide traffic lane must be open at all times.

The second and third paragraphs of Section 12-3.10, “Traffic Cones,” of the State Standard Specifications are amended to read:

The type of reflective cone sleeve used shall be at the option of the Contractor. Only one type of reflective cone sleeve shall be used on the project.

Lane closures shall conform to the provisions in the section of these special provisions entitled “Traffic Control System for Lane Closure.”

Personal vehicles of the Contractor's employees shall not be parked on the traveled way or shoulders, including any section closed to public traffic.

The Contractor shall notify local authorities of its intent to begin work at least five (5) days before work is begun. The Contractor shall cooperate with local authorities relative to handling traffic through the area and shall make its own arrangements relative to keeping the working area clear of parked vehicles.

The Contractor shall provide access to all businesses and residences within the construction zone at all times throughout the project. When the work requires the closing of a business driveway or other entrance, the Contractor shall post signs directing the public to the most convenient access to the business.

The Contractor shall provide access to all private driveways when construction is not actively in progress. Access to driveways fronting the construction area shall not be hindered or blocked for time periods greater than 4 hours without notifying the property owner or tenant in writing 24 hours prior to blockage.

The Contractor shall provide safe public access around the work site in accordance with the American Disabilities Act requirements during the work.

Whenever vehicles or equipment are parked on the shoulder within six feet of a traffic lane, the shoulder area shall be closed with fluorescent traffic cones or portable delineators placed on a taper in advance of the parked vehicles or equipment and along the edge of the pavement at 25-foot intervals to a point not less than 25 feet past the last vehicle or piece of equipment. A minimum of nine (9) cones or portable delineators shall be used for the taper. A C23 (Road Work Ahead) or C24 (Shoulder Work Ahead) sign shall be mounted on a telescoping flag tree with flags. The flag tree shall be placed where directed by the Engineer.

When the Contractor’s operations create a condition hazardous to traffic or to the public, he shall furnish, erect and maintain, at his expense and without cost to the City, such fences, barricades,

lights, signs and other devices as are necessary to prevent accidents or damage or injury to the public. The Contractor shall also furnish such flagmen, provided with the necessary equipment kept clean and in good condition by the Contractor at his expense, as may be necessary to give adequate warning to traffic or to the public that the roadway is under construction or of any dangerous conditions to be encountered. The flagmen shall perform their duties and their work of furnishing and placing such signs, lights, flags and other warning and safety devices as set forth in the current "Work Area Traffic Control Handbook" as published by the Building News, Inc., Los Angeles, California.

Minor deviations from the requirements of this section concerning hours of work which do not significantly change the cost of the work may be permitted upon the written request of the Contractor if, in the opinion of the Engineer, public traffic will be better served and the work expedited. Such deviations shall not be adopted until the Engineer has indicated its written approval. All other modifications will be made by contract change order.

Full cost of conforming to this section shall be considered as included in the contract lump sum price for "Public Convenience and Safety."

Traffic Control System for Lane Closure -- A traffic control system shall be provided by the Contractor and shall be in accordance with the provisions of Section 12, "Temporary Traffic Control," of the State Specifications, the provisions under "Maintaining Traffic" elsewhere in these Special Provisions.

The provisions in this section shall not relieve the Contractor from its responsibility to provide such additional devices, or take such measures as may be necessary, to comply with the provisions in Section 7-1.04, "Public Safety," of the State Standard Specifications.

Prior to any lane closures, it shall be the responsibility of the Contractor to provide 72-hour notice to the City and obtain City approval of the lane closure. Failure to notify the City in a timely manner is cause for the City to prevent the lane closure.

Whenever a lane closure is made, the Contractor shall close the lane by placing fluorescent traffic cones, portable cones, portable delineators, or other devices approved by the Engineer, along a taper and along the edge of the closed lane adjacent to public traffic. One telescoping flag tree with flags shall be placed at the beginning and at the end of the taper.
If any component in the traffic control system is displaced or ceases to operate or function as specified, from any cause, during the progress of the work, the Contractor shall immediately repair said component to its original condition or replace said component, and shall restore the component to its original location. Full cost of providing flaggers shall be borne exclusively by the Contractor.

The Contractor shall submit a traffic control plan and approved by the City Engineer prior to commencing any work.

Protection of the Work -- To minimize traffic congestion during the resurfacing operation, the work shall be done in stages. Residents with driveways within the closed section shall be notified at least 24 hours in advance of closure via door hangers and signs within the limits of the project.
Barricades and signs and their cost of replacement, the cost of flagmen necessary for the protection of the work and the public and costs of notification of affected residents will be considered as included in the contract price paid for bid items shown in the proposal, and no separate payments shall be made.

Payment for "Public Convenience and Safety," shall be at the contract lump sum price as set forth in the proposal, and shall include all labor, materials, tools, equipment, and all work necessary for the completion of this item.

WATER POLLUTION CONTROL

Summary

It shall be the responsibility of the Contractor to comply with all of the requirements of the latest NPDES General Permit for "Storm Water Discharges Associated with Construction and Land Disturbance Activities" (Order No. 2009-0009-DWQ, NPDES No. CAS000002) hereinafter called the "Permit" and standard industry practice.

This includes, but is not limited to, preparing plans and application, maps as well as all necessary reporting on the SWQCB's Storm Water Multiple Application and Report Tracking System (SMARTS System). The Contractor, working with their certified Qualified Storm Water Pollution Prevention Plan (SWPPP) Developer (QSD), will determine what would be the best course of action to comply with the latest State NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Order No. 2009-0009- DWQ. If the Contractor's QSD determines a SWPPP is the best course of action, it shall be the responsibility of the Contractor and their QSD to submit to Construction Management a completed SWPPP for review. Upon acceptance of the SWPPP document by Construction Management, the QSD shall prepare a Notice of Intention (NOI) application in the SWQCB's SMARTS System and upload all necessary documents and maps to be approved by the Legally Responsible Person (LRP). Until a written approval of the SWPPP has been obtained from the SWQCB, no construction activity shall commence on the project site. Upon obtaining written approval of the SWPPP, it shall be the responsibility of the Contractor to implement the SWPPP. Throughout the course of the project, the Contractor's Qualified SWPPP Practitioner (QSP) shall conduct periodic inspections, testing, any reporting on the SMARTS System as well as coordinate with the QSD to update the SWPPP as necessary. At the conclusion of construction, it shall be the responsibility of the Contractor and his or her QSD/QSP to ensure Annual Report(s) have been prepared on the SMARTS System as well as prepare the Notice of Termination (NOT) for City's approval. The Contractor shall keep a copy of the approved SWPPP, and amendments thereto, at the job site and in the general business office of the Contractor. In addition, the Contractor shall make available to Construction Management copies of all amendments to the SWPPP as prepared by the Contractor. The SWPPP shall be made available upon request of a representative of the Fresno Metropolitan Flood Control District, Regional Water Quality Control Board, State Water Resources Control Board or U. S. Environmental Protection Agency. Requests by the public shall be directed to the Engineer.

If the Contractor and/or his/her QSD determines that a SWPPP is not necessary, then it shall be the responsibility of the Contractor to provide a list of Best Management Practices (BMP) that are to be implemented during the Work to Construction Management. The Contractor shall implement the BMP in a timely manner and maintain throughout the duration of the project. The Contractor shall keep a copy of the BMP list and any modification to the list at the job site and in the general business office of the Contractor. In addition, the Contractor shall make available to the City copies of all modifications to the BMP list. The BMP list shall be made available upon request of a representative of the Fresno Metropolitan Flood Control District, Regional Water Quality Control Board, State Water Resources Control Board or U. S. Environmental Protection Agency. Requests by the public shall be directed to Construction Management.

Notice of violation and/or fines for any non-compliance will be the responsibility of the Contractor.

Manage work activities to reduce the discharge of pollutants to surface waters, groundwater, or municipal separate storm sewer systems including work items shown in the Bid Item List for:

1. Prepare Storm Water Pollution Prevention Plan. SWPPP preparation includes obtaining SWPPP approval, amending the SWPPP, preparing a CSMP and a SAP, and monitoring and inspecting WPC practices at the job site.
2. Storm Water Annual Report. Storm Water Annual Report preparation includes certifications, monitoring and inspection results, and obtaining Storm Water Annual Report acceptance.
3. Storm Water Sampling and Analysis Day. Storm Water Sampling and Analysis Day includes reporting of storm water quality per qualifying rain event. If specified for the risk level, the work includes preparation, collection, analysis, and reporting of storm water samples for turbidity, pH, and other constituents.
4. Rain Event Action Plan. If specified for the project risk level, REAP preparation includes preparing and submitting REAP forms and monitoring weather forecasts.

Do not start work until:

1. SWPPP is approved by the City.
2. SWPPP is uploaded onto the SMART System.
3. WDID is issued.
4. SWPPP review requirements have been fulfilled. If the RWQCB requires time for SWPPP review, allow 30 days for the RWQCB to review the SWPPP as specified under "Submittals" of these special provisions.

This project is anticipated to be Risk Level 1.

Definitions and Abbreviations

active and inactive areas: (1) Active areas have soil disturbing work activities occurring at least once within 14 days, and (2) Inactive areas are areas that have not been disturbed for at least 15 days.

BMPs: Best Management Practices are water pollution control practices.

construction phase: Construction phases are (1) Highway Construction including work activities for building roads and structures, (2) Plant Establishment including maintenance on vegetation installed for final stabilization, and (3) Suspension where work activities are suspended and areas are inactive.

CSMP: Construction Site Monitoring Program.

NAL: Numeric Action Level.

NEL: Numeric Effluent Limit.

NPDES: National Pollutant Discharge Elimination System.

NOI: Notice of Intent.

Normal working hours: The hours you normally work on this project.

Preparation Manual: The Department's "Storm Water Pollution Prevention Plan and Water Pollution Control Program Preparation Manual."

QSD: Qualified SWPPP Developer.

QSP: Qualified SWPPP Practitioner.

Qualified rain event: A qualified rain event is a storm that produces at least 0.5 inch of precipitation with a 48 hour or greater period between storms.

REAP: Rain Event Action Plan.

RWQCB: Regional Water Quality Control Board.
SAP: Sampling and Analysis Plan.
SSC: Suspended Sediment Concentration.
SWRCB: State Water Resources Control Board. SWPPP: Storm Water Pollution Prevention Plan. **WDID:** Waste Discharge Identification Number. WPC: Water Pollution Control.
WPC Manager: Water Pollution Control Manager. The WPC Manager implements water pollution control work described in the SWPPP and oversees revisions and amendments to the SWPPP.

Submittals

Within 20 days after contract approval, start the following process for SWPPP approval:

1. Submit 3 copies of the SWPPP and allow 20 days for the Engineer's review. If revisions are required, the Engineer provides comments and specifies the date that the review stopped.
2. Change and resubmit the SWPPP within 15 days of receipt of the Engineer's comments. The Engineer's review resumes when the complete SWPPP is resubmitted.
3. When the Engineer approves the SWPPP, submit an electronic and 4 printed copies of the approved SWPPP.
4. If the RWQCB reviews the approved SWPPP, the Engineer submits one copy of the approved SWPPP to the RWQCB for their review and comment. RWQCBs requiring time to review SWPPPs include:
5. If the Engineer requests changes to the SWPPP based on RWQCB comments, amend the SWPPP within 10 days.

Submit:

1. Storm water training records including training dates and subjects for employees and subcontractors. Include dates and subjects for ongoing training, including tailgate meetings.
2. Employee training records.

    2.1. Within 5 days of SWPPP approval for existing employees
    2.2. Within 5 days of training for new employees
    2.3. At least 5 days before subcontractors start work for subcontractor's employees

Prepare a Storm Water Annual Report for the reporting period from July 1st to June 30th. For the prior reporting period, submit the report no later than July 15th if construction occurs from July 1st through June 30th or within 15 days after contract acceptance if construction ends before June 30th. Submit the Storm Water Annual Report as follows:

1. Submit 2 copies of the Storm Water Annual Report and allow 10 days for the Engineer's review. If revisions are required, the Engineer provides comments and specifies the date that the review stopped.
2. Change and resubmit the Storm Water Annual Report within 5 days of receipt of the Engineer's comments. The Engineer's review resumes when the complete Storm Water Annual Report is resubmitted.
3. When the Engineer accepts the Storm Water Annual Report, insert the WPC Manager's signed certification and the Engineer's signed certification.

Submit one electronic copy and 2 printed copies of the accepted Storm Water Annual Report. Submit as required:

1. NAL Exceedance Reports
2. NEL Exceedance Reports
3. Visual Monitoring Reports
4. Inspection Reports
5. BMP Status Report

At least 5 days before operating any construction support facility, submit:

1. A plan showing the location and quantity of WPC practices associated with the construction support facility
2. A copy of the NOI approved by the RWQCB and the SWPPP approved by the RWQCB if you will be operating a batch plant or a crushing plant under the General Industrial Permit

Quality Control and Assurance Training

Provide storm water training for:

1. Project managers
2. Supervisory personnel
3. Employees involved with WPC work

Train all employees, including subcontractor's employees, in the following subjects:

1. WPC rules and regulations
2. Implementation and maintenance for:
    2.1. Temporary Soil Stabilization
    2.2. Temporary Sediment Control
    2.3. Tracking Control
    2.4. Wind Erosion Control
    2.5. Material pollution prevention and control
    2.6. Waste management
    2.7. Non-storm water management
    2.8. Identifying and handling hazardous substances
    2.9. Potential dangers to humans and the environment from spills and leaks or exposure to toxic or hazardous substances

Employees must receive initial WPC training before working on the job site. Conduct weekly training meetings covering:

1. WPC BMP deficiencies and corrective actions
2. BMPs that are required for work activities during the week
3. Spill prevention and control
4. Material delivery, storage, use, and disposal
5. Waste management
6. Non-storm water management procedures

Training for personnel to collect water quality samples must include:

1. SAP review
2. Health and safety review
3. Sampling simulations

A Storm Water Information Handout has been prepared for this contract and is available as described in "Supplemental Project Information" of these special provisions.

If you operate construction support facilities, protect storm water systems or receiving waters from the discharge of potential pollutants by using WPC practices.

Construction support facilities include:

1. Staging areas
2. Storage yards for equipment and materials
3. Mobile operations
4. Batch plants for PCC and HMA
5. Crushing plants for rock and aggregate
6. Other facilities installed for your convenience such as haul roads

If you operate a batch plant to manufacture PCC, HMA, or other material; or a crushing plant to produce rock or aggregate; obtain coverage under the General Industrial General Permit. You must be covered under the General Industrial Permit for batch plants and crushing plants located:

1. Outside of the job site
2. Within the job site that serve one or more contracts

Discharges from manufacturing facilities such as batch plants must comply with the general waste discharge requirements for Order No. 97-03-DWQ, NPDES General Permit No. CAS000001, issued by the SWRCB for "Discharge of Stormwater Associated with Industrial Activities Excluding Construction Activities." For the General Industrial Permit, go to:

http://www.waterboards.ca.gov/

You may obtain copies of the Preparation Manual from the Publication Distribution Unit. The mailing address for the Publication Distribution Unit is:

State of California
Department of Transportation
Publication Distribution Unit
1900 Royal Oaks Drive
Sacramento, California 95815
Telephone: (916) 445-3520

The Preparation Manual and other WPC references are available at the Department's "Construction Storm Water and Water Pollution Control" Web site. For the Web site, go to:

http://www.dot.ca.gov/hq/construc/stormwater/stormwater1.htm

Water Pollution Control Manager

Assign one WPC Manager to implement the SWPPP. The WPC Manager must comply with the Permit qualifications for a QSP and a QSD. You may assign a different QSD to prepare the SWPPP.

The QSD must have the following qualifications:

1. Department approved storm water management training described in the Department's "Construction Storm Water and Water Pollution Control" web site
2. Registration or certification described in the Permit

The QSP must meet the qualifications of the QSD or have the following certifications:

1. Department approved storm water management training described in the Department's "Construction Storm Water and Water Pollution Control" web site
2. Certification described in the Permit

At the job site, the WPC Manager must:

1. Be responsible for WPC work
2. Be the primary contact for WPC work
3. Oversee the maintenance of WPC practices
4. Oversee and enforce hazardous waste management practices
5. Have the authority to mobilize crews to make immediate repairs to WPC practices
6. Ensure that all employees have current water pollution control training
7. Implement the approved SWPPP and amend the SWPPP when required

WPC Manager must oversee:

1. Inspections of WPC practices identified in the SWPPP
2. Inspections and reports for visual monitoring
3. Preparation and implementation of REAPs
4. Sampling and analysis
5. Preparation and submittal of:
    5.1. NAL exceedance reports
    5.2. NEL exceedance reports
    5.3. SWPPP annual certification
    5.4. Annual reports
    5.5. BMP status reports

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

General

SWPPP work includes preparing a SWPPP including a CSMP, obtaining SWPPP approval, amending the SWPPP, inspecting and reporting on WPC practices at the job site. The SWPPP must comply with the Preparation Manual and the Permit. The SWPPP must be submitted in place of the water pollution control program under Section 13-2, "Water Pollution Control Program," of the Standard Specifications.

Additional WPC work will be paid for as extra work under Section 4-1.05, "Changes and Extra Work," of the Standard Specifications.

The SWPPP must include sections as specified for the project risk level as follows:

1. For risk level 1:
    1.1. Schedule
    1.2. CSMP

2. For risk level 2:
    2.1. Schedule
    2.2. CSMP
    2.3. Adherence to Effluent Standards for NALs
    2.4. REAP
3. For risk level 3:
    3.1. Schedule
    3.2. CSMP
    3.3. Adherence to Effluent Standards for NALs and NELs
    3.4. REAP

The SWPPP must include WPC practices for:

1. Storm water and non-stormwater from areas outside of the job site related to project work activities such as:
    1.1. Staging areas
    1.2. Storage yards
    1.3. Access roads
2. Activities or mobile operations related to contractor obtained NPDES permits
3. Construction support facilities

The SWPPP must include a copy of permits obtained by the Department such as Fish & Game permits, US Army Corps of Engineers permits, RWQCB 401 Certifications, and RWQCB Waste Discharge Requirements for Aerially Deposited Lead Reuse.

Amend the SWPPP annually and resubmit it by July 15th. Amend the SWPPP if:

1. Changes in work activities could affect the discharge of pollutants
2. WPC practices are added by change order work
3. WPC practices are added at your discretion
4. Changes in the amount of disturbed soil are substantial
5. Objectives for reducing or eliminating pollutants in storm water discharges have not been achieved
6. There is a Permit violation

Whenever you amend the SWPPP, follow the same process specified for SWPPP approval. Retain a printed copy of the approved SWPPP at the job site.

SWPPP Schedule

The SWPPP schedule must:

1. Describe when work activities will be performed that could cause the discharge of pollutants into storm water
2. Describe WPC practices associated with each construction phase
3. Identify soil stabilization and sediment control practices for disturbed soil areas

Construction Site Monitoring Program (CSMP)

General

The QSD must prepare a CSMP as part of the SWPPP. The CSMP must be developed before starting work and be revised to reflect current construction activities as necessary.

The CSMP must include sections for the project risk level as follows:

1. For risk level 1:
    - 1.1. Visual Monitoring
    - 1.2. SAP for Non-Visible Pollutants
2. For risk level 2:
    - 2.1. Visual Monitoring
    - 2.2. SAP for Non-Visible Pollutants
    - 2.3. SAP for sediment and turbidity
    - 2.4. SAP for pH
3. For risk level 3:
    - 3.1. Visual Monitoring
    - 3.2. SAP for Non-Visible Pollutants
    - 3.3. SAP for sediment and turbidity
    - 3.4. SAP for pH
    - 3.5. SAP for receiving waters
    - 3.6. SAP for temporary active treatment systems

Visual Monitoring

The WPC Manager must oversee the performance of visual inspections for qualifying rain events. For each qualifying rain event, perform visual inspections and record observations during normal working hours as follows:

1. Record the time, date, and rain gauge reading
2. Observe:
    - 2.1. Within 2 days before the storm:
        - 2.1.1 Drainage areas for spills, leaks, or uncontrolled pollutants
        - 2.1.2 Proper implementation of WPC practices
        - 2.1.3 Storm water storage areas for leaks and adequate freeboard
    - 2.2. Every 24 hours during the storm:
        - 2.2.1 WPC practices for effective operation
        - 2.2.2 WPC practices needing maintenance and repair
    - 2.3. Within 2 days after the storm event:
        - 2.3.1. Discharge locations
        - 2.3.2. WPC practices to evaluate the design, implementation, and effectiveness
        - 2.3.3. To identify where additional WPC practices may be needed.

Perform non-stormwater discharge visual inspections as follows:

1. At least once during each of the following periods:
    - 1.1. January through March
    - 1.2. April through June
    - 1.3. July through September
    - 1.4. October through December

2. Observe flowing and contained storm water for the presence of floating and suspended materials, sheen on the surface, discoloration, turbidity, odors, and sources of observed pollutants
3. Observe the job site for the presence of authorized and unauthorized non-stormwater discharges and their sources

The WPC Manager must prepare visual inspection reports that include the following:

1. Name of personnel performing the inspection, inspection date, and date inspection report completed
2. Storm and weather conditions
3. Locations and observations
4. Corrective actions taken

Maintain visual inspections reports at the job site as part of the SWPPP.

Sampling and Analysis Plan (SAP)

General

Include a SAP in the CSMP to monitor the effectiveness of WPC practices. The SAP must comply with the Preparation Manual.

Assign trained personnel to collect water quality samples. Document their training in the SAP. Describe the following water quality sampling procedures in the SAP:

1. Sampling equipment
2. Sample preparation
3. Collection
4. Field measurement methods
5. Analytical methods
6. Quality assurance and quality control
7. Sample preservation and labeling
8. Collection documentation
9. Sample shipping
10. Chain of custody
11. Data management and reporting
12. Precautions from the construction site health and safety plan
13. Laboratory selection and certifications

Whenever assigned field personnel take samples, comply with the equipment manufacturer's recommendation for collection, analysis methods, and equipment calibration.

Samples taken for laboratory analysis must follow water quality sampling procedures and be analyzed by a State-certified laboratory under 40 CFR Part 136, "Guidelines Establishing Test Procedures for the Analysis of Pollutants."

The SAP must identify the State-certified laboratory, sample containers, preservation requirements, holding times, and analysis method. For a list of State-certified laboratories, go to:

http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx

Include procedure for sample collection during precipitation.

Retain water quality sampling documentation and analytical results with the SWPPP at the job site. Show pollutant sampling locations on SWPPP drawings.

If discharges or sampling locations change because of changed work activities or knowledge of site conditions, amend the SAP.

If the project is risk level 2 or risk level 3, include procedures for collecting and analyzing at least 3 samples for each day of each qualifying rain event. Describe the collection of effluent samples at all locations where the storm water is discharged off-site.

Analytical Results and Evaluation

Submit an electronic copy (in file format .xls, .txt, .csv, .dbs, or .mdb) and a printed copy of water quality analytical results, and quality assurance and quality control within 48 hours of field analysis sampling, and within 30 days for laboratory analysis. Also provide an evaluation of whether the downstream samples show levels of the tested parameter that are higher than the control sample.

Electronic water quality analysis results must have the following information:

1. Sample identification number
2. Contract number
3. Constituent
4. Reported value
5. Analytical method
6. Method detection limit
7. Reported limit

SAP for Non-Visible Pollutants

The SAP must include a description of the sampling and analysis strategy for monitoring non- visible pollutants.

The SAP must identify potential non-visible pollutants present at the job site associated with any of the following:

1. Construction materials and waste
2. Existing contamination due to historical site usage
3. Application of soil amendments, including soil stabilization materials, with the potential to change pH or contribute toxic pollutants to storm water

SWPPP drawings must show the locations planned for storage and use of potential non-visible pollutants.

The SAP must include sampling procedures for the following conditions when observed during a storm water visual inspection. For each of the following, collect at least one sample for each qualifying storm event:

1. Materials or waste containing potential non-visible pollutants that are not stored under watertight conditions
2. Materials or waste containing potential non-visible pollutants that are stored under watertight conditions, but a breach, leakage, malfunction, or spill is observed; the leak

or spill has not been cleaned up before precipitation; and material or waste could discharge non-visible pollutants to surface waters or drainage system

3. Chemical applications, including fertilizer, pesticide, herbicide, methyl methacrylate concrete sealant, or non-pigmented curing compound used during precipitation or within 24 hours preceding precipitation, and could discharge pollutants to surface waters or drainage system
4. Applied soil amendments, including soil stabilization materials that could change pH levels or contribute toxic pollutants to storm water runoff and discharge pollutants to surface waters or drainage system, unless available independent test data indicates acceptable concentrations of non-visible pollutants in the soil amendment
5. Storm water runoff from an area contaminated by historical usage of the site that could discharge pollutants to surface waters or drainage systems

The SAP must provide sampling procedures and schedule for:

1. Sample collection during the first 2 hours of each rain event that generate runoff
2. Sample collection during normal working hours
3. Each non-visible pollutant source
4. Uncontaminated control sample

The SAP must identify locations for sampling downstream and control samples, and reasons for selecting those locations. Select control sample locations where the sample will not come in contact with materials, waste, or areas associated with potential non-visible pollutants or disturbed soil areas.

SAP for Sediment and Turbidity

If the project is risk level 2 or risk level 3, sample and analyze for turbidity:

Parameter	Test Method	Detection Limit (Min)	Unit
Turbidity	Field test with calibrated portable instrument	1	NTU

If the project is risk level 3 and the turbidity NEL has been exceeded, sample and analyze for SSC:

Parameter	Test Method	Detection Limit (Min)	Unit
SSC	ASTM Method D3977-97	5	Mg/L

SAP for pH

If the project is risk level 2 or risk level 3, sample and analyze for pH:

Parameter	Test Method	Detection Limit (Min)	Unit

pH	Field test with calibrated portable instrument	0.2	pH units

SAP for Receiving Waters

If the project is risk level 3, describe procedures for obtaining samples from representative and accessible locations:

1. Upstream of the discharge point
2. Downstream of the discharge point

Show receiving water sampling locations on SWPPP drawings.

If there are several discharge points, describe procedures for obtaining samples from a single upstream and a single downstream location.

Rain Event Action Plan (REAP)

REAP work includes preparing and submitting REAP forms and monitoring weather forecasts. The WPC Manager must submit a REAP to protect the job site at least 48 hours before a predicted rain event.

Prepare a REAP when the National Weather Service is predicting at least a 50 percent probability of precipitation within 72 hours.

For the REAP, use approved forms and include:

1. Site location
2. Risk level
3. Contact information including 24-hour emergency phone numbers for:
    3.1. WPC Manager
    3.2. Erosion and sediment control providers or subcontractors
    3.3. Storm water sampling providers or subcontractors
4. Storm Information
5. Construction phase information for:
    5.1. Highway Construction including active and inactive areas for work activities for building roads and structures
    5.2. Plant Establishment including maintenance on vegetation installed for final stabilization where areas are inactive
    5.3. Suspension where work activities are suspended and areas are inactive
6. Construction phase information including:
    6.1. Construction activities
    6.2. Subcontractors and trades on the job site
    6.3. Pre-storm activities including:
        6.3.1. Responsibilities of the WPC Manager
        6.3.2. Responsibilities of the crew and crew size
        6.3.3. Stabilization for active and inactive disturbed soil areas
        6.3.4. Stockpile management
        6.3.5. Corrective actions taken for deficiencies identified during pre-storm visual inspection

6.4. Activities to be performed during storm events including:
    6.4.1. Responsibilities of the WPC Manager
    6.4.2. Responsibilities of the crew and crew size
    6.4.3. BMP maintenance and repair
6.5. Description of flood contingency measures

You must have the REAP onsite at least 24 hours before a predicted rain event. A printed copy of each REAP must be at the job site as part of the SWPPP
Implement the REAP including mobilizing crews to complete activities no later than 24 hours before precipitation occurs.

IMPLEMENTATION REQUIREMENTS

SWPPP Implementation

Obtain, install, and maintain a rain gauge at the job site. Observe and record daily precipitation.

Monitor the National Weather Service Forecast Office on a daily basis. For forecasts, go to:

http://www.srh.noaa.gov/forecast

Whenever you or the Engineer identifies a deficiency in the implementation of the approved SWPPP:

1. Correct the deficiency immediately, unless the Engineer agrees to a later date for making the correction
2. Correct the deficiency before precipitation occurs

If you fail to correct the deficiency by the agreed date or before the onset of precipitation, the Department may correct the deficiency and deduct the cost of correcting the deficiency from payment.

Continue SWPPP implementation during any temporary suspension of work activities.

Install WPC practices within 15 days or before predicted precipitation, whichever occurs first.

Numeric Action Levels (NALs)

If the project is risk level 2 or risk level 3, then it is subject to NALs:

Parameter	Test Method	Detection Limit (Min)	Unit	Numeric Action Limit
pH	Field test calibrated with portable instrument	0.2	pH units	Lower NAL = 6.5 Upper NAL = 8.5
Turbidity	Field test calibrated with portable instrument	1	NTU	250 NTU

Numeric Effluent Limits (NELs)

If the project is risk level 3, then it is subject to NELs:

Parameter	Test Method	Detection Limit (Min)	Unit	Numeric Effluent Limit
pH	Field test calibrated with portable instrument	0.2	pH units	Lower NEL = 6.0 Upper NEL = 9.0
Turbidity	Field test calibrated with portable instrument	1	NTU	500 NTU

The storm event daily average for storms up to the 5-year, 24-hour storm, must not exceed the NEL for turbidity.

The daily average sampling results must not exceed the NEL for pH.

Storm Water Sampling and Analysis Day

Storm Water Sampling and Analysis Day work includes preparation, collection, analysis, and reporting of storm water samples for turbidity, pH, and other constituents. If the project is risk level 2 or risk level 3, and there is a qualified rain event that produces runoff, comply with the project's SAP for preparation, collection, analysis, and reporting of storm water samples. Collect:

1. Samples for each non-visible pollutant source and a corresponding uncontaminated control sample
2. Samples for turbidity, pH, and other constituents as specified
3. At least 3 samples for each day of each qualifying rain event
4. Samples for all locations where the storm water is discharged off-site

Perform sample collection during:

1. First 2 hours of each qualified rain event that produces runoff
2. Normal working hours

If the project is risk level 3, obtain receiving water samples.

You are not required to physically collect samples during dangerous weather conditions such as flooding or electrical storms.

If downstream samples show increased levels, assess WPC practices, site conditions, and surrounding influences to determine the probable cause for the increase.

Inspection

The WPC Manager must oversee inspections for WPC practices identified in the SWPPP:

1. Before a forecasted storm
2. After precipitation that causes site runoff
3. At 24-hour intervals during extended precipitation
4. On a predetermined schedule, a minimum of once a week

The WPC Manager must oversee daily inspections of:

1. Storage areas for hazardous materials and waste
2. Hazardous waste disposal and transporting activities
3. Hazardous material delivery and storage activities
4. WPC practices specified under "Construction Site Management" of these special provisions

The WPC Manager must use the Storm Water Site Inspection Report provided in the Preparation Manual.

The WPC Manager must prepare BMP status reports that include the following:

1. Location and quantity of installed WPC practices
2. Location and quantity of disturbed soil for the active or inactive areas

Within 24 hours of finishing the weekly inspection, the WPC Manager must submit:

1. Copy of the completed site inspection report
2. Copy of the BMP status report

REPORTING REQUIREMENTS

Storm Water Annual Report

Storm Water Annual Report work includes certifications, monitoring and inspection results, and obtaining Storm Water Annual Report acceptance. The WPC Manager must prepare a Storm Water Annual Report. The report must:

1. Use an approved report format
2. Include project information including description and location
3. Include storm water monitoring information including:
    3.1. Summary and evaluation of sampling and analysis results including laboratory reports
    3.2. Analytical methods, reporting units, detections limits for analytical parameters
    3.3. Summary of corrective actions
    3.4. Identification of corrective actions or compliance activities that were not implemented
    3.5. Summary of violations
    3.6. Names of individuals performing storm water inspections and sampling
    3.7. Logistical information for inspections and sampling including location, date, time, and precipitation
    3.8. Visual observations and sample collection records
4. Include documentation on training for:
    4.1. Individuals responsible for NPDES permit compliance
    4.2. Individuals responsible for BMP installation, inspection, maintenance, and repair
    4.3. Individuals responsible for preparing, revising, and amending the SWPPP

NAL Exceedance Report

If the project is risk level 2 or risk level 3 and an effluent sample exceeds a NAL, notify the Engineer and submit a NAL Exceedance Report no later than 48 hours after the conclusion of the storm event. The report must:

1. Include the following field sampling results and inspections:
    1.1. Analytical methods, reporting units, and detection limits

1.2. Date, location, time of sampling, visual observation and measurements
1.3. Quantity of precipitation of the storm event
2. Description of BMPs and corrective actions taken to manage NAL exceedance

NEL Violation Report

If the project is risk level 3 and an NEL is exceeded, notify the Engineer and submit a NEL Violation Report within 6 hours. The report must:

1. Include the following field sampling results and inspections:
   1.1. Analytical methods, reporting units, and detection limits
   1.2. Date, location, time of sampling, visual observations and measurements
   1.3. Quantity of precipitation of the storm event
2. Description of BMPs and corrective actions taken to manage NEL exceedance

If the project is risk level 2 or risk level 3, submit all sampling results to the Engineer no later than 48 hours after the conclusion of a storm event.

PAYMENT

The contract lump sum price paid for “Water Pollution Control” includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in street sweeping, including disposal of collected material, as shown on the plans, as specified in the Standard Specifications, these special provisions, and as directed by the Engineer.

The contract lump sum price paid for prepare storm water pollution prevention plan includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in preparing, obtaining approval of, and amending the SWPPP and CSMP, inspecting water pollution control practices, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

The City does not adjust payment for an increase or decrease in the quantity of storm water sampling and analysis day.

You may request or the Engineer may order laboratory analysis of storm water samples. Laboratory analysis of storm water samples will be paid for as extra work under Section 4- 1.05D, "Extra Work," of the State Standard Specifications.

The City does not pay for the preparation, collection, laboratory analysis, and reporting of storm water samples for non-visible pollutants if WPC practices are not implemented before precipitation or if a failure of a WPC practice is not corrected before precipitation.

The City does not pay for implementation of WPC practices in areas outside the highway right- of-way not specifically provided for in the plans or in the special provisions.

The City does not pay for WPC practices installed at your construction support facilities.

WPC practices for which there are separate bid items of work are measured and paid for as those bid items of work.

AS-BUILT DRAWINGS

Record Drawings shall be submitted before the notice of completion is filed and must include the following:

- Shall be submitted on Mylar, at least 24”x 36”, and shall bear the name, address, telephone number of the firm preparing the drawings and in electronic (AutoCAD) format.
- Surveyor’s/Engineers statement (with embossed or wet seal and with and original signature on each sheet) shall verify the as-built drawings reflect the true conditions in the field.
- Contractor’s statement (with original signature on each sheet) shall verify all construction specifications and product qualities have been met or exceeded.
- “AS-BUILT DRAWINGS” or “RECORD DRAWINGS” shall be clearly labeled on each sheet.
- The location and elevation of the benchmark referenced will be shown on the drawing.
- Corrected placement, grade, elevation and alignment of roads, water system, sewer and storm system, lighting system and appurtenances, pipe sizes, material changes, shall all be shown on as-built drawing.
- All horizontal distances shall be shown to the nearest tenth of a foot (0.1’). All elevations shall be shown to the nearest five hundredths of a foot (0.05’).

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

TABLE OF CONTENTS
GENERAL VANG PAO PARK TECHNICAL SPECIFICATIONS



DIVISION 01 GENERAL REQUIREMENTS

ADMINISTRATIVE REQUREMENTS 01300
QUALITY REQUIREMENTS 01400
TEMPORARY FACILITIES AND CONTROLS 01500
TEMPORARY UTILITIES 01510
VEHICULAR ACCESS AND PARKING 01550
ENVIRONMENTAL PROTECTION 01570
PRODUCT REQUIREMENTS 01600
EXECUTION REQUIREMENTS 01700
CLOSEOUT PROCEDURES 01770
CLOSEOUT SUBMITTALS 01780
OPERATIONS AND MAINTENANCE DATA 01782

DIVISION 02 EXISTING CONDITIONS

DEMOLITION 02100
SITE CLEARING 02230
LANDSCAPE GRADING 02260
FILL AND BACKFILL 02316
AGGREGATE BASE COURSE 02721
PAVEMENT JOINT SEALANTS 02764
LANDSCAPE INSTALLATION 02905

DIVISION 03 CONCRETE

CONCRETE 30000
CONCRETE FORMING AND ACCESSORIES 31000

TABLE OF CONTENTS
GENERAL VANG PAO PARK TECHNICAL SPECIFICATIONS

DIVISION 10 SPECIALTIES

SIGNS AND SIGNPOSTS 10430

DIVISION 11 EQUIPMENT

PLAYGROUND EQUIPMENT 11 68 00

DIVISION 16 ELECTRICAL (PRE-2004 FORMAT)

ELECTRICAL GENERAL REQUIREMENTS 16050

BASIC ELECTRICAL MATERIALS AND METHODS 16100

LIGHTING 16500

DIVISION 26 ELECTRICAL

EXTERIOR LIGHTING 25 56 00

SOLAR LIGHTING 25 56 70

DIVISION 31 EARTHWORK

SITE PREPARATION 31 10 00

EARTHWORK 31 20 00

STRUCTURAL EXCAVATION AND FILL 31 23 00

TRENCHING, BACKFILLING, AND COMPACTION 31 23 16

HYDROSEED 31 25 14.13

DIVISION 32 EXTERIOR IMPROVEMENTS

EXTERIOR IMPROVEMENTS LANDSCAPE MAINTENANCE 32 01 90.13

TABLE OF CONTENTS
GENERAL VANG PAO PARK TECHNICAL SPECIFICATIONS

ASPHALT PAVING AND BASE 32 12 16

PAVEMENT MARKING AND SIGNS 32 12 23

DECOMPOSED GRANITE PAVING 32 15 41.10

CONCRETE SIDEWALK AND CURBS 32 16 00

PLAYGROUND RESILIENT SURFACING POURED-IN-PLACE 32 18 16.13

DECORATIVE METAL FENCES AND GATES 32 31 19

SITE FURNISHINGS AND EQUIPMENT 32 33 00

PLANTING IRRIGATION 32 84 00

DIVISION 33 UTILITIES

WATER UTILITY DISTRIBUTION PIPING 33 11 00

SANITARY SEWERAGE UTILITIES 33 30 00

SITE DRAINAGE 33 40 00

SECTION 01300

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preconstruction meeting.
B. Site mobilization meeting.
C. Progress meetings.
D. Construction progress schedule.
E. Submittals for review, information, and project closeout.
F. Number of copies of submittals.
G. Submittal procedures.

1.02 RELATED SECTIONS

A. Project General Conditions.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

A. The Owner will schedule a meeting after Notice of Award.

B. Attendance Required:
1. The Owner
2. Landscape Architect
4. Contractor
5. Landscape Contractor
6. Sub-contractors as requested by the Owner

C. Agenda
1. Submission of list of Subcontractors, list of Products and schedule of values.
2. Designation of personnel representing the parties to Contract, The Owner, Contractor, Construction Management firm and Landscape Architect.
3. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.

4. Critical Path Scheduling.

D. The Landscape Architect will record minutes and distribute copies after meeting to participants.

3.02 SITE MOBILIZATION MEETING

A. The Owner's Representative will schedule a meeting at the Project site prior to Contractor occupancy.

B. Attendance Required:
1. Contractor
2. The Owner
3. Landscape Architect
4. Contractor's Superintendent
5. Major Subcontractors

C. Agenda:
1. Use of premises by The Owner and Contractor.
2. The Owner's requirements and occupancy prior to completion.
3. Permit requirements.
4. Construction facilities and controls provided by Owner.
5. Temporary utilities.
6. Survey and park layout.
7. Security and housekeeping procedures.
8. Critical Path Schedules.
9. Application for payment procedures.
10. Procedures for testing.
11. Procedures for maintaining record documents.
12. Requirements for start-up of equipment.
13. Inspection and acceptance of equipment put into service during construction period.

3.03 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at maximum one-week intervals.

B. The Owner will make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.

C. Attendance Required: Job superintendent, major Subcontractors and suppliers, the Owner and others, as appropriate to agenda topics for each meeting.

D. Agenda:
1. Review minutes of previous meetings.

2. Review of Critical Path Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems that may impede planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Submit updated schedule and critical path items.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Maintenance of quality and work standards.
11. Effect of proposed changes on progress schedule and coordination.
12. Other business relating to Work.

E. The Architect will record minutes and distribute copies after meeting to participants.

3.04 CONSTRUCTION PROGRESS SCHEDULE

A. See Contract General Conditions for Schedules Required of Contractor

B. Construction Timeline Priorities – Contract shall coordinate schedule with Owner's prefabricated restroom contractor to have utilities stubbed out and restroom pad ready for restroom contractor to install restroom.

3.05 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
1. Product data.
2. Shop drawings.
3. Samples for selection.
4. Samples for verification.
5. Ten (10) days before scheduled work, provide mock-up samples onsite for inspection of samples over 50 pounds.

B. Submit to the Owner's Representative for the limited purpose of checking with information given and the design concept expressed in the contract documents.

C. Samples will be reviewed only for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01780 - CLOSEOUT SUBMITTALS.

3.06 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
1. Design data.

2. Certificates.
3. Test reports.
4. Inspection reports.
5. Manufacturer's instructions.
6. Manufacturer's field reports.
6. Other types indicated.

B. Small size sheets, not larger than 8-1/2 x 11; submit the number of copies which the Contractor requires, plus three copies for the Owner, plus one copy for Landscape Architect.

3.07 SUBMITTALS FOR PROJECT CLOSEOUT

A. When the following are specified in individual sections, submit them at project closeout:
   1. Project record documents.
   2. Operation and maintenance data.
   3. Warranties.
   4. As-built documents.
   5. Other types as indicated.

B. Submit for the Owner's benefit during and after project completion.

3.08 NUMBER OF COPIES OF SUBMITTALS

A. Documents for Review: Submit the number of copies which the Contractor requires, plus three copies for the Owner, plus one copy for the Landscape Architect.

   1. Small size sheets, not larger than 8-1/2 x 11 inches: Submit the number of copies the Contractor requires, plus two copies, which will be retained by the Landscape Architect.

   2. Larger Sheets, Not Larger Than 11 x 17 inches: Submit to the Owner the number of opaque reproductions which Contractor requires, plus two copies which will be retained by the Landscape Architect.

B. Documents for Information: Submit two copies.

C. Documents for Project Closeout: Make one copy of submittal originally reviewed.

D. Samples: Submit the number specified in individual specification sections, one of which will be retained by the Landscape Architect.
   1. Retained samples will not be returned to Contractor unless specifically so stated.

3.09 SUBMITTAL PROCEDURES

A. Transmit each submittal with AIA Form G810.

B. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.

C. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number; and specification section number, as appropriate on each copy.

D. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

E. Submit three (3) copies of each submittal for the landscape architect to retain plus the number of copies the Contractor would like returned for their use.

F. Deliver submittals to the Landscape Architect’s business address.

G. Schedule submittals to expedite the Project, and coordinate submission of related items.

H. Make submissions within the following number of days from issuance of Notice to Proceed:
   1. Items needed in initial stages of work, or requiring long lead-time for ordering: 15 days.
   2. All electrical equipment items: 21 calendar days
   3. All other items including all samples: 30 calendar days

I. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.

J. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.

K. Provide space for Contractor and Landscape Architects review stamps.

L. When revised for resubmission, identify all changes made since previous submission.

M. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any Inability to comply with requirements.

N. Submittals not requested will not be recognized or processed.

END OF SECTION

SECTION 01400

QUALITY REQUIREMENTS

PART1 GENERAL

1.01 SECTION INCLUDES

A. Control of installation.

B. Testing and inspection services.

1.02 RELATED SECTIONS

A. General Conditions

B. Section 01300 Submittals

C. Section 01700 Contract Closeout

D. Individual Specifications Section: Submittals, inspection and testing required, and standards for testing.

1.03 REFERENCES

A. Title 24, California Building Code, current edition.

B. ASTM C 1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.

1.04 TESTING AND INSPECTION AGENCIES

A. The respective Sections of these specifications contain detailed requirements for materials testing and inspections to be performed by an approved testing laboratory.

B. All costs incurred for testing laboratory services shall be paid for by the Owner. However, should re-testing be required due to contractor's failure to comply with the Contract Document requirements, the Contractor shall pay costs of re-testing.

1.05 OWNER'S RESPONSIBILITIES

A. Owners will select and employ a pre-qualified, independent testing laboratory to perform inspections, sampling and testing of materials as specified in the individual Specifications Section.

B. Owner will pay for all initial testing laboratory services as described within the

Contract Document or not normally required by codes and ordinances.

C. When the initial tests indicate non-compliance with the Contract Documents, the costs all subsequent re-testing occasioned by the non-compliance shall be deducted by the Owner from the Contract Sum.

1.06 CONTRACTOR'S RESPONSIBLITIES

A. Cooperate with laboratory personnel, provide access to work, arrange access to manufacturer's operations.

B. Provide laboratory preliminary representative samples of materials to be tested, in required quantities.

C. Furnish copies of mill test reports.

D. Provide casual labor and facilities for access to work being tested; obtain and handle supplies at the site; facilitate inspections and tests; provide facilities for laboratory's exclusive use for storage and curing of test samples.

E. Coordinate requests for testing by Owner-employed testing laboratory through the Owner's Representative. Notify Owner's Representative two (2) working days in advance of operations to allow for assignment of personnel and scheduling of tests.

F. Pay for additional laboratory inspections, sampling and testing required for Contractor's convenience and when initial test indicate that work does not comply with Contract Documents.

G. Pay for inspections and tests required by code or ordinances or by a plan approval authority, and made by legally constituted authority (i.e., municipal deputy inspector), unless otherwise provided for the Contract Documents.

H. When required on individual Specifications Section, submit manufacturer's certificate, executed by responsible officer, certifying that product meet or exceed specified requirements. Provide certification in duplicate.

1.07 TESTING LABORATORY RESPONSIBILITIES

A. Perform specified inspections, sampling and testing of materials and methods of construction, comply with specified standards. Ascertain compliance with requirements of Contract Documents.

B. Provide prompt notification of irregularities or deficiencies of work observed during performance of services.

C. Perform additional inspections and tests required by Owner's Representative.

D. After each inspection and test, promptly submit copies of laboratory report to the Owner. Reports are to include: Date issued, project title and number, name of inspector, date and time of sampling or inspection, identification of product and Specification Section(s), location in the project, type of inspection or test, date of test and results of test, When requested by Owner's Representative provide interpretation of test results.

E. Testing Laboratory shall have no authority to: release, revoke, alter, or enlarge on requirements of Contract Documents; approve, accept or stop any portion of the work; perform any duties of the Contractor.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary Field Office.
B. Temporary utilities.
C. Temporary telephone service.
D. Temporary sanitary facilities.
E. Temporary Controls: Barriers and fencing.
F. Security requirements.
G. Waste removal facilities and services.
H. Project identification sign.
I. Dust control.
J. Erosion control
K. Existing Conditions verification.

1.02 RELATED SECTIONS

A. Section 01510 - Temporary Utilities.
B. Section 01550 - Vehicular Access and Parking.
C. County General Conditions Section 10.

1.03 TEMPORARY UTILITIES - See Section 01510

1.04 TEMPORARY SANITARY FACILITIES

A. Provide and maintain portable construction toilet facilities for Contractor's employees and Owner Representatives.

1. Toilet Facilities: Provide sufficient suitably enclosed toilets with urinal for use by all trades engaged on project. The Owner shall approve location.
2. Washing Facilities: Provide properly mounted and adequate wash sinks connected to water supply, in location approved by the Owner.
3. Drinking Water Facilities: Provide clean, sanitary, and adequate drinking water.

B. Maintain daily in clean and sanitary condition.

1.05 BARRIERS AND ACCESS

A. Provide barriers to prevent unauthorized entry to construction areas, to allow for owner and residents access to their property and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
B. Provide barricades required by governing authorities for public rights-of-way.

C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.06 SECURITY

A. Contractor is responsible for security of areas of his work during the entire time of the Contract. Within this responsibility, the Contractor will repair and/or replace all damages to the work and loss of materials due to vandalism or theft. This includes damages to existing facilities due to construction activities.

1.07 VEHICULAR ACCESS AND PARKING

A. Coordinate access and haul routes with governing authorities and the Owner.

B. Provide and maintain access to fire hydrants and the emergency vehicle access and access to adjacent residential housing for the public and the Owner, free of obstructions.

C. Provide means of removing mud from vehicle wheels before entering streets.

1.08 WASTE REMOVAL

A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

B. Provide containers with lids. Dispose of waste off-site weekly.

1.09 PROJECT IDENTIFICATION SIGN

A. Provide project identification sign to be posted in advance of construction. Provide painted plywood project identification sign, size to be 4' x 6' and must last the duration of the Project. Sign to read: Hewitt Park Renovation, date of construction, construction company name and contact phone number. Design approval of the sign by the Owner and shall be obtained prior to fabrication and construction.

B. Erect on site at location to be approved by the owner.

C. No other signs are allowed without Owner permission except those required by law.

1.10 FIELD OFFICE

Contractor may locate a field office trailer onsite. Size and location of trailer to be approved by Owner prior to placement.

1.11 DUST CONTROL

A. Use water wagons or spray from hoses to control dust created by work operations.
B. Comply with all local and state dust control ordinances.

1.12 EROSION CONTROL

A. Contractor is advised that the State of California has adopted National Pollution Discharge Elimination Requirements in accordance with the requirements of the Clean Water Act. This project is subject to all of the requirements contained in those acts. The contractor shall abide by all of the laws, ordinances, and regulations associated with the NPDES and the Clean Water Act.

B. The SWPPP must be maintained throughout the course of construction and be available at the construction site. The contractor is advised that he shall conform to this requirement and that he shall implement all of the measures required by the SWPPP, including maintenance of diligent record keeping and logs as required by the SWPPP.

C. The contractor shall provide copies of the updated SWPPP to the Owner prior to starting construction operations. The contractor shall provide copies of his SWPPP records and logs during the course of construction, on a monthly basis to the Owner. The contractor shall also keep copies of these records and logs with the SWPPP at the construction site for potential viewing by the State of California Regional Water Quality Control Board.

1.13 EXISTING CONDITIONS VERIFICATION

A. Contractor shall record existing site conditions, either by photographs or video, to provide a record of pre-construction site conditions.

1.14 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary field office, utilities, equipment, facilities, and materials prior to Final Application for Payment inspection.
B. Remove underground installations to a minimum depth of 2 feet.
C. Clean and repair damage caused by installation or use of temporary work.
D. Unless otherwise directed, restore existing and permanent facilities used during construction to original condition.
E. Maintenance and Removal:
   1. Maintain all temporary facilities and controls as long as needed for safe and proper completion of work. Remove all such temporary facilities and controls as rapidly as progress of work will permit.
   2. Non-compliance with requirements within this section may result in payment being withheld and/or deductive change orders for lack of proper facilities and controls. If necessary, the owner will provide such facilities and controls as required and back charge the Contractor.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 01510

TEMPORARY UTILITIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary Electricity.
B. Temporary Water.

1.02 RELATED SECTIONS

A. Section 01500 - Temporary Facilities and Controls: temporary sanitary facilities required by law.

1.03 TEMPORARY ELECTRICITY

A. Cost: By Contractor.
B. It is expected that electrical needs by the Contractor will only require their own generator. If additional electrical services are needed, then the following shall apply;
C. Provide separate electrical source or metering and reimburse the Owner for cost of energy used. Exercise measures to conserve energy.
D. Provide temporary electric feeder from electrical service at location as directed.
E. Complement existing power service capacity and characteristics as required.
F. Provide power outlets for construction operations, with branch wiring and distribution boxes located as required. Provide flexible power cords as required.
G. Provide main service disconnect and over-current protection at convenient location and meter.
H. Permanent convenience receptacles may be utilized during construction.
I. Provide adequate distribution equipment, wiring, and outlets to provide single-phase branch circuits for power.

1.04 TEMPORARY WATER SERVICE

A. Cost of Water Used: By Contractor. Contractor to pay for water used for on-site work before irrigation system is connected.
B. Contractor to coordinate metering of water use with Owner.
C. Provide and maintain suitable quality water service for construction operations at time of project mobilization.
D. Extend branch piping with outlets located so water is available by hoses with threaded connections.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 01550

VEHICULAR ACCESS AND PARKING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Parking.
B. Construction parking controls.
C. Haul routes.

1.02 RELATED SECTIONS

A. Section 01500 TEMPORARY FACILITIES AND CONTROLS

PART 2 – NOT USED

PART 3 EXECUTION

3.01 PARKING

A. Arrange for temporary parking at staging area to accommodate use of construction personnel.
B. Locate as approved by the Owner.

3.02 CONSTRUCTION PARKING CONTROL

A. Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles, and Owner's operations.

3.03 HAUL ROUTES

A. Consult with authority having jurisdiction, establish public thoroughfares to be used for haul routes and site access.
B. Confine construction traffic to designated haul routes.
C. Maintain roads in satisfactory condition during the contract time. Repair damages attributable to work of the project at intervals as needed. At completion of Contract, roads and entryways shall be left in condition at least equal to that existing at start of Contract, except as may be otherwise required by Contract Documents.
D. Temporary access reads are to be provided by and completely removed by the Contractor upon completion of work.

END OF SECTION

SECTION 01570

ENVIRONMENTAL PROTECTION

PART 1 GENERAL

1.01 DESCRIPTION

A. This section describes the requirements for the conservation and protection of environmental resources at the work site during and as the result of construction activities, except as otherwise specified. State and federal environmental statutes, rules, regulations, and policies have been enacted to protect environmental resources by ensuring that significant environmental impacts of projects are identified and adequate mitigation measures are incorporated into the project. Environmental protection affects several resource areas, including biological resources, cultural resources, air quality, and water quality. Potential impacts may occur through the generation of noise, dust emissions, discharges of pollutants, disturbances to terrestrial and aquatic areas, additional traffic, creation of traffic obstructions and other threats to public safety, and degradation of resources. Construction activities shall be in accordance with environmental and regulatory permits issued for the project and the Contractor may be held responsible for any violations as prescribed by law. If the Contractor's actions cause infractions that require suspension of work, then the Engineer may, without limiting the City's other rights and remedies, suspend work as specified in the General Conditions.

B. The Contractor shall be responsible for the sequence and control of construction activities, selection and maintenance of equipment, and the conduct of the Contractor's employees at the work site to ensure that specific mitigation measures to reduce or eliminate identified environmental impacts are implemented.

C. Contractor's personnel failing or refusing to carry out requirements of this section in the opinion of the Engineer, shall be removed from the work site if ordered.

D. Construction equipment failing to produce the quality of work within the requirements of this section, in the opinion of the Engineer, shall be removed from the work site if ordered.

E. The Contractor shall minimize construction activities causing disturbances to vegetation, wildlife or cultural resources. Construction activities may be restricted in various ways that include, but are not limited to, the environmental protection and/or mitigation measures specified.

1.02 RELATED SECTIONS

A. Drawings, General Conditions, Supplementary General Conditions, Special Provisions and other Division 1 sections apply to this section. This section may require direct correlation with the following sections of the contract:

1. Section 02260 – Landscape Grading

2. Section 02905 – Landscape Installation

1.03 REFERENCES

A. The following publications form a part of this specification to the extent referenced.
1. The City has obtained the following environmental documents/references and permits:

a. CEQA — California Environmental Quality Act of 1970:

1) ND — Negative Declaration.

2) Notice of Determination.

1.04 SUBMITTALS

A. The Contractor shall develop and submit five detailed plans for implementing the requirements of this section. The plans shall include but not be limited to the following:

1. Name of Contractor's supervisor responsible for implementing the plans.

2. Working drawings and data for implementing the requirements of the plans.

3. Air Quality Control Plan.

4. Water Quality Control Plan and Storm Water Pollution Prevention Plan (SWPPP) (Update existing SWPPP on file with the City).

a. The Storm Water Pollution Prevention Plan (SWPPP) shall be submitted to the Regional Water Quality Control Board (RWQCB) prior to demolition work begins. The SWPPP must be approved by the RWQCB prior to the start of demolition activities.

5. Fire Prevention and Control Plan.

6. Noise Control Plan.

7. Traffic Control Plan.

B. The Contractor shall submit the above plans including working drawings and data to the City for approval five (5) working days prior to mobilization.

C. Copies of all of the above plans shall be maintained at the work site throughout the construction period.

1.05 DELIVERY, STORAGE, AND HANDLING OF HAZARDOUS MATERIALS

A. Construction Sites and Equipment:

1. The storage, transportation, transfer, containment, and disposal of hazardous materials, such as fuel, oil, and lubricants have potential for affecting water quality. Fuel, oil and other petroleum products shall be stored only at designated sites. The use of hazardous materials shall be avoided or minimized where possible. Each hazardous material containment container shall be clearly labeled with its identity, handling and safety instructions, and emergency contact. Similar information shall be clearly available and visible in the storage areas. Storage and transfer of such materials shall not be allowed within 100 feet of streams or sites known to contain sensitive biological resources. Storage or use of hazardous materials in or near wet or dry streams shall be consistent with the Fish and Game Code and other State laws. Material Safety Data Sheets (MSDS) shall be made readily available to the Contractor's employees and other personnel at the work site. The accumulation and temporary storage of hazardous wastes shall not exceed 90 days. Soils contaminated by spills or cleaning wastes shall be contained and shall be removed to an approved disposal site. Disposal of hazardous wastes shall be in compliance with all applicable laws and regulations.

2. Petroleum drippings on equipment have potential to result in water pollution during construction. The Contractor shall maintain construction equipment to minimize petroleum drippings. All stationary power equipment such as engines, pumps, generators, welders, and air compressors shall be positioned over drip pans. Equipment used in water shall be free of exterior petroleum products prior to submersion, and shall be checked and maintained daily to keep the equipment exteriors clean.
3. Petroleum products shall be stored in nonleaking containers at impervious storage sites from which runoff is not permitted to escape.

4. Personnel stationed at or near these sites shall be trained in emergency response and spill containment techniques. An ample supply of absorbent pads, pillows, socks, booms, and other spill containment materials shall be maintained at the hazardous materials storage sites for use in the event of spills. Contaminated absorbent pads, pillows, socks, booms, and other spill containment materials shall be placed in nonleaking sealed container until transport to an appropriate disposal facility. The Contractor shall furnish to the Engineer a contact person and telephony number of a company experienced in emergency response for vacuuming and containing spills of oil or other petroleum products.
5. Fuel may be transferred from the storage areas to construction equipment by tanker trucks. Fuel transfers shall take place at least 100 feet from exclusion zones, drainage areas, water bodies and streams.
6. Fuel transfer vehicles shall have absorbent pads, pillows, socks, booms or other spill containment materials placed under the fueling operation (between the fuel

truck and the equipment being serviced). A trained service attendant shall monitor the filling of equipment and shall stop the fuel flow immediately if any spill occurs. Fuel transfer shall not resume until the problem is resolved to the satisfaction of the Engineer. The service attendant shall be trained in emergency response, fire extinguisher use, and spill containment techniques.

1.06 SENSITIVE SPECIES - NOT USED

1.07 COLLECTION AND HARASSMENT OF SPECIES

A. No intentional harassment, killing, or collection of plants or animals at or around the work site will be allowed.

1.08 BOUNDARIES OF WORK SITE AND LISTED SENSITIVE SPECIES

A. The boundaries of the work site is as shown on the construction drawings for showing exact location of work and areas that may be occupied by the Contractor. The Contractor and the Contractor's employees shall not leave the right of way or temporary construction easement, without prior written approval.

B. Preconstruction surveys will be conducted to designate exclusion zones.

C. Exclusion zones will be marked with either large flagged stakes connected by cord, or survey laths or wooden stakes prominently flagged with survey ribbon or fencing. The Contractor and Contractor's employees shall not encroach into flagged exclusion zones in any manner, whether in vehicles or on foot, without prior written approval.

D. No pets, camping, firearms, or any other use of the right of way area will be allowed. Harassment, killing, or destruction of dens or burrows of wildlife species is strictly prohibited. Contractor's employees shall not be allowed at the work site during nonworking hours. Only authorized camping areas may be utilized. Exceptions that will not cause environmental impacts to biological resources may be allowed by the Engineer.

E. Food-related trash, such as wrappers, cans, bottles, and scraps shall be placed in closed containers and removed daily from work sites. All trash or garbage shall be removed to a City-approved disposal site at least weekly by the Contractor. The right of way shall be policed daily by Contractor's personnel and monitored by inspectors or environmental personnel.

F. Traffic shall be restricted to existing roads and flagged right of way or temporary construction easement. Construction related vehicles shall not exceed 25 mph on straight and level roads, with a 10-mph speed limit in areas of steepness or with curves.

1.09 BIOLOGICAL RESOURCES (PLANTS AND ANIMALS)

A. The Construction activities have potential for affecting the biological resources by physical destruction, disturbance, and/or displacement.

B. The Contractor shall not be permitted in areas where sensitive plant species occur until the sensitive plants are removed or soil seed banks are removed by the City.

C. Unless otherwise approved, the Contractor shall not apply any rodenticide or herbicide to control any vertebrate or plant pest.

1.10 CULTURAL RESOURCES

A. See also Special Provisions

B. The construction activities have potential for affecting cultural resources such as historically significant resources, local land uses, commercial establishments, or the activities of local landowners, residents, or recreationalists.

C. The Contractor shall reduce potential adverse impacts to cultural resources that may be associated with construction by implementing the preservation of culturally significant resources in accordance with the National Historic Preservation Act of 1966, (16 U.S.C.470).

D. If any potential paleontological, archaeological or historic sites are uncovered, the Owners Representative will be notified prior to proceeding with the work affected. If necessary the Engineer will suspend work as specified in the General Conditions. The Owners Representative will provide for an initial field evaluation of the site within seventy-two (72) hours after receiving notification of Contractor's discovery.

E. If human remains are exposed, all construction activities shall be halted in the immediate vicinity until the County Coroner has assessed the remains.

1.11 AIR QUALITY CONTROL PLAN

A. See also Special Provisions.

B. The construction activities have potential for resulting in localized, short-term construction emissions from stationary, mobile and area sources, and fugitive dust from construction equipment, and trucks for hauling.

C. The Contractor shall reduce these effects by submitting and implementing an Air Quality Control Plan. The following components, if applicable, shall be included in the plan and if not applicable the Contractor shall explain in the plan why that component or portions thereof is not included in the plan.

D. Fugitive dust shall be minimized by watering, minimizing cleared areas, covering exposed surfaces, seeding, managing activities to keep the active work area small at any given time, applying chemical suppressant or implementing other dust control measures as approved. One or more of the above control measures shall be used sufficiently to prevent fugitive dust from leaving the work site. Increased application of control measures shall be required whenever conditions cause fugitive dust.

E. The Contractor shall control fugitive dust by:
   1. Minimizing areas cleared to facilitate construction, such as storage areas, staging areas, stockpile areas and vehicle parking.
   2. Covering spoil piles when necessary.
   3. Constructing roadways, driveways, sidewalks, building pads and other graded surfaces.
   4. Chipping cleared vegetation and covering exposed areas as work is completed.
   5. Performing seeding requirements as required.
   6. Minimizing the amount of construction equipment operating during any given time period. This includes scheduling of construction truck trips to reduce peak emission, limit the length of the construction workday, and phasing of construction activities.
   7. Covering haul trucks traveling onto or off the work site. Haul trucks traveling on the work site shall be covered as necessary to prevent dust from leaving the work site.

1.12 WATER QUALITY CONTROL PLAN AND STORM WATER POLLUTION PREVENTION PLAN

A. The construction activities have potential for resulting in localized, short-term impacts to water quality due to fuel or oil leaks or spills at fuel or oil transfer areas, erosion and runoff.

B. The Contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP) for the General Construction Storm Water Permit. Development of the SWPPP shall be accomplished by the Contractor using guidelines provided by the State Water Resources Control Board (SWRCB) for containment of construction activity pollutants such as wastes, erosion, and sediments. The SWPPP shall be submitted to the Regional Water Quality Control Board (RWQCB) five (5) working days prior to field mobilization. The SWPPP must be approved by the RWQCB prior to the start of construction activities. Guidelines for the SWPPP are presented in the Construction Storm Water Permit Package available at the Redding, California, office of the RWQCB. The SWPPP shall include provisions for water quality protection and for implementing Best Management Practices (BMPs) chosen to reduce and mitigate construction activity pollutants. The Contractor shall implement this plan during all construction activities by providing BMPs and conforming to the following provisions.

C. Erosion could potentially cause impacts both on and off the work site. On the work site, erosion could wash away soil and fill material, resulting in the formation of gullies. Off the work site, erosion could result in downstream sedimentation and turbidity impacts. Additionally, the Contractor shall:

   1. Restrict personnel to designated roads.

2. Use methods for controlling erosion on designated roads.
3. Use methods for on-site erosion control and sediment capture methods during construction.

4. Minimize erosion during stormy weather at the work site.
5. Use methods for post construction erosion control.
6. If drainage swales are employed as BMPs, they shall be vegetated or otherwise protected to reduce erosion.

7. Contact personnel and emergency procedures shall be posted at the work site to avoid and minimize loss of property and life in case of a significant storm event.

8. The project Storm Water Pollution Prevention Plan (SWPPP) shall be strictly implemented.

9. All settleable solids, oils, and grease shall be contained to prevent their release into the environment. Flocculents may be used on solids that do not readily settle, as long as they do not contaminate water quality.

10. Excess construction and operation materials, rubble, and excavated soil shall be either reused or disposed of in approved sites. All imported fill shall be obtained from approved sources

11. Exposed areas shall be stabilized with temporary mulching, landscaping, and other erosion control methods during and after land disturbance activities.

12. Areas of disturbance with slopes toward a stream shall be stabilized to reduce erosion potential.

13. Stock piles shall be protected from erosion either by covering them or by placing barriers (e.g. silt fence, sand bags) around their perimeter to prevent the escape of sediments.

14. Spoil disposal areas shall be graded to ensure that drainage from these sites will minimize erosion of spoil materials and adjacent native soil material. Grading shall conform with the existing topography of the area.

D. Streams, Creeks, Drainages or Waterbody Crossings:

1. Berms or other diversion structures may be constructed around the work site to allow uninterrupted flow in streams, creeks or waterbody crossings. Construction shall be separated into two phases to maintain flows through half the waterbody width unless otherwise directed. When the diversion is installed, water shall be directed into siltation basins. If straw bales are used to form the basins, water shall be allowed to settle, filter through the straw, and flow over the natural terrain before returning to the stream. If earth fill is used to form the berm, water shall be allowed to settle, and flow over the

protected berm onto the natural terrain before returning to the stream.

2. Earth moving activities shall not occur in streams, creeks, waterbody crossings, or riparian areas within 24 hours of predicted 50 percent chance of National Weather Service anticipated precipitation during the rainy season (November 15 through April 15). Stockpiled topsoil or backfill shall be stored above the stream high water mark, outside any riparian zone, and not in any area where the stockpiled material could be washed back into the stream. Straw bales or other BMPs shall be used at flowing river or creek crossings at the end of each workday during the rainy season, and at the end of each workday during other seasons when rain is forecast. If a major storm is predicted or occurs outside of the rainy season, straw bales or other BMPs shall be implemented immediately.

3. Any diversion site, siltation basin and other measures shall be inspected during day light hours and after normal working hours during adverse weather conditions for proper operation. Any measure not operating properly or effectively shall be corrected immediately.

1.14 FIRE PREVENTION AND CONTROL PLAN

A. The Contractor shall prepare a fire prevention and control plan in consultation with the Engineer, and responsible fire protection agency(s). The following components, if applicable, shall be included in the plan, and if not applicable the Contractor shall explain in the plan why that component or a portion thereof is not included in the plan:

1. Procedures and policies for controlling any fires including fires that are off the work site, and other related fire prevention and control procedures developed in consultation with resource agencies and fire protection agency(s).

2. No fires will be allowed at the work site. Smoking will be allowed only in areas designated for smoking which shall be cleared of vegetation or in enclosed vehicles.

3. The Contractor shall be responsible for maintaining appropriate fire suppression equipment at the work site. Fire extinguishers, shovels and other fire fighting equipment, shall be inventoried and available at work sites and on construction equipment. Each vehicle on the right of way shall be equipped with a minimum 20 pound (or two 10 pound) fire extinguisher(s) and a minimum of five gallons of water in a fire fighting apparatus (e.g. bladder bag).

4. At the work site, a sealed fire toolbox shall be located at a point accessible in the event of fire. This fire toolbox shall contain: one backpack pump-type extinguisher filled with water, two axes, two McLeod fire tools, and enough shovels so that each employee at the work site can be equipped to fight fire.

5. One or more chainsaws of 3-1/2 or more horsepower with a cutting bar 20 inches in length or longer shall be immediately available at the work site.

6. Gasoline powered construction equipment with catalytic converters shall be equipped with shielding or other acceptable fire prevention features. Internal combustion engines shall be equipped with spark arrestors.

7. Welding sites shall include fire prevention provisions.

8. The Contractor shall maintain contact with local fire fighting agencies throughout the fire season for update on fire conditions and such fire conditions shall be communicated to the Contractor's employees and the Engineer daily.

9. Vehicles are restricted to the work site unless otherwise allowed for fire control procedures.

10. Disturbance to the terrestrial or aquatic environment through the use of heavy construction equipment shall be kept to a minimum. Clearing of vegetation shall occur from the outer boundaries of the work area toward the interior. If a fire should start, the appropriate fire protection agencies responsible shall be contacted immediately. Hand crews, fire fighting water trucks or other fire control measures may be used as a first defense. Only as required, heavy construction equipment shall be utilized to contain the fire or protect a structure from damage.

1.15 NOISE CONTROL PLAN

A. The Contractor shall prepare a Noise Control Plan in consultation with the City and the Engineer. The following components, if applicable, shall be included in the plan. If the components are not applicable, the Contractor shall explain in the plan why the component or portion is not included in the plan.

1. All construction vehicles and equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers.
2. Stockpiling and vehicle staging areas shall be sited as far as practical from residences.
3. Hours of construction shall be limited to the hours specified in applicable local noise ordinances.

PART 2 PRODUCTS
NOT USED

PART 3 EXECUTION
NOT USED

PART 4 PAYMENT
NOT USED

END OF SECTION

SECTION 01600

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General product requirements.
B. Transportation, handling, storage and protection.
C. Product option requirements.
D. Substitution limitations and procedures.
E. Spare parts and maintenance materials.

1.02 RELATED SECTIONS

A. Section 01400 - Quality Requirements: Product quality monitoring.
B. Section 01300 - Submittal; review, information, procedure and project closeout.

1.03 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
B. Also see Section 01300 for Submittal requirements.
C. Shop Drawing Submittals: Prepared specifically for this Project.
D. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.
E. Indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

A. Provide interchangeable components of the same manufacture for components being replaced.

2.02 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufactures named and meeting specifications, no options or substitutions allowed.
C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.03 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Provide spare parts, maintenance, and extra products of types and in quantities specified in individual specification sections.
B. Deliver to Project site; provide receipts to owner as part of close out documents.

PART 3 EXECUTION

3.01 SUBSTITUTION PROCEDURES

A. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

C. A request for substitution constitutes a representation that the submitter:

1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
2. Will provide the same warranty for the substitution as for the specified product.
3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to the Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.

D. Substitution Submittal Procedure:

1. Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.
2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
3. The Owner will notify Contractor in writing of decision to accept or reject request.

3.02 TRANSPORTATION AND HANDLING

A. Transport and handle products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling disfigurement or damage.

3.03 STORAGE AND PROTECTION

A. Store and protect products in accordance with manufacturers' instructions.

B. Store with seals and labels intact and legible.

C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

D. For exterior storage of fabricated products, place on sloped supports above ground.

E. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.

F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

G. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

J. Deliveries of plant materials must be scheduled so that plant materials arrive no more than five calendar days prior to planting When temperatures exceed 90 degrees F,

plants must be stored under shade cloth and watered at least twice each day, as required to maintain plants in a healthy, turgid condition. Wilted and/or otherwise unhealthy plants shall be immediately removed from the job site.

END OF SECTION

SECTION 01700

EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. General installation of products.
4. Coordination of Owner-installed products.
5. Progress cleaning.
6. Starting and adjusting.
7. Protection of installed construction.
8. Correction of the Work.

B. Related Sections include the following:

1. General Conditions Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
2. Division 1 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 SUBMITTALS

A. Qualification Data: For land surveyor.

B. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.

C. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

D. Certified Surveys: Submit two copies signed by land surveyor.

E. Final Project Survey: Submit digital copies in AutoCAD and Adobe Acrobat format showing the Work performed and recorded survey data.

1.4 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

PART 2 - PRODUCTS Not Used

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

1. Before construction, verify the location and points of connection of utility services.

B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

a. Description of the Work.
b. List of detrimental conditions, including substrates.
c. List of unacceptable installation tolerances.
d. Recommended corrections.

2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility or Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Owner. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Changes to Work due to Contractors negligence to contact Owner for clarification shall be paid by Contractor.

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Owner promptly.
B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
3. Inform installers of lines and levels to which they must comply.
4. Check the location, level and plumb, of every major element as the Work progresses.
5. Notify Owner when deviations from required lines and levels exceed allowable tolerances.
6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by the Owner.

3.4 FIELD ENGINEERING

A. Identification: Owner will identify existing benchmarks, control points, and property corners.

B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points without prior written approval of Owner. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Owner before proceeding.
2. Replace lost or destroyed permanent benchmarks and control points promptly.
   Base replacements on the original survey control points.

C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and site work.

3.5 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
4. Maintain minimum headroom clearance of 8 feet (2.4 m) in spaces without a suspended ceiling.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Owner.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.

2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F (27 deg C).
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1 Section "Quality Requirements."

3.8 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.9 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in General Conditions Section "Cutting and Patching."

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION

SECTION 01770

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Inspection procedures.
2. Warranties.
3. Final cleaning.

B. Related Sections include the following:

1. General Conditions "Payments and Completion" section for requirements for Final Completion and Final Payment.
2. Division 1 Section "Execution Requirements" for progress cleaning of Project site.
3. Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
4. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
5. Divisions 2 through 16 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

5. Prepare and submit Project Record Documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
8. Complete startup testing of systems.
9. Submit test/adjust/balance records.
10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
11. Advise Owner of changeover any applicable utilities.
12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
13. Complete final cleaning requirements, including touchup galvanized painting.
14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Landscape Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Landscape Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Landscape Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment according to General Conditions "Payments and Completion".
2. Submit certified copy of Owner’s Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Owner.
   The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Landscape Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Owner will prepare a final Certificate for Payment after inspection

or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order.
2. Organize items applying to each space by major element, including categories for grading, concrete, fences, walls, irrigation and planting.
3. Include the following information at the top of each page:

a. Project name.
b. Date.
c. Name of Owner Representative
d. Name of Contractor.
e. Page number.

1.6 WARRANTIES

A. Submittal Time: Submit written warranties on request of Landscape Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Clean exposed exterior finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
f. Remove labels that are not permanent.
g. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
    1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
h. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.

i. Replace parts subject to unusual operating conditions.
j. Leave Project clean and ready for occupancy.

C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION

SECTION 01780

CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project Record Documents.

B. Operation and Maintenance Data.

C. Training.

D. Warranties and bonds.

1.02 RELATED SECTIONS

A. Section 01300 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

B. Individual Product Sections: Specific requirements for operation and maintenance data.

C. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

A. Project Record Documents: Submit documents to the Owner with claim for final Application for Payment.

B. Operation and Maintenance Data:

1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Landscape Architect will review draft and return one copy with comments.
2. For equipment, or component parts of equipment put into service during construction and operated by the Owner, submit completed documents within ten days after acceptance.
3. Submit 1 copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Landscape Architect comments. Revise content of all document sets as required prior to final submission.
4. Submit two sets of revised final documents in final form within 10 days after final inspection.

C. Warranties and Bonds:

1. For equipment or component parts of equipment put into service during

construction with the City's permission, submit documents within ten days after acceptance.

2. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.
3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:

1. Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other modifications to the Contract.
5. Reviewed shop drawings, product data, and samples.
6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by the City.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:

1. Manufacturer's name and product model and number.
2. Product substitutions or alternates utilized.
3. Changes made by Addenda and modifications.

F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:

1. Measured horizontal and vertical locations of underground utilities, irrigation and appurtenances, referenced to two permanent surface improvements.
2. Field changes of dimension and detail.
3. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

A. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.

B. Product Data: Mark each sheet to dearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:

1. Product data, with catalog number, size, composition, and color and texture designations.
2. Information for re-ordering custom manufactured products.

B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:

1. Description of unit or system, and component parts.
2. Identify function, normal operating characteristics, and limiting conditions.
3. Include performance curves, with engineering data and tests.
4. Complete nomenclature and model number of replaceable parts.

B. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter, and any special operating instructions.

C. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and

alignment, adjusting, balancing, and checking instructions.

D. Provide servicing and lubrication schedule, and list of lubricants required.

E. Include manufacturer's printed operation and maintenance instructions.

F. Include sequence of operation by controls manufacturer.

G. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

H. Additional Requirements: As specified in individual product specification sections.

3.05 OPERATION AND MAINTENANCE MANUALS

A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

B. Prepare data in the form of an instructional manual.

C. Binders: Commercial quality, 8-1/2 x 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.

D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.

E. Provide tabbed dividers for each separate product and system, with typed description of product and major component parts of equipment.

F. Text: Manufacturer's printed data, or typewritten data on 24-pound paper.
Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

3.06 TRAINING

A. Provide training and orientation of City’s operating staff in proper care and operation of equipment, systems and controls.

B. Submit three copies of certificate, signed by Owner's Representative, attesting to their having been instructed.

3.07 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of work. Except for items put into use with the City’s permission, leave date of beginning

of time of warranty until the Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

END OF SECTION

SECTION 01782

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory.
2. Emergency manuals.
3. Operation manuals for systems, subsystems, and equipment.
4. Maintenance manuals for the care and maintenance of products, materials, and finishes systems and equipment.

B. Related Sections include the following:

1. Division 1 Section "Administrative Requirements" for submitting copies of submittals for operation and maintenance manuals.
2. Division 1 Section "Closeout Procedures" for submitting operation and maintenance manuals.
3. Divisions 2 through 16 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

1.3 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 SUBMITTALS

A. Initial Submittal: Submit 2 draft copies of each manual at least 15 days before requesting inspection for Substantial Completion. Include a complete operation and maintenance directory. Landscape Architect will return one copy of draft and mark whether general scope and content of manual are acceptable.

B. Final Submittal: Submit one copy of each manual in final form at least 15 days before final inspection. Landscape Architect will return copy with comments within 15 days after final inspection.

1. Correct or modify each manual to comply with Landscape Architect's comments. Submit 3 copies of each corrected manual within 15 days of receipt of Landscape Architect's comments.

1.5 COORDINATION

A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

A. Organization: Include a section in the directory for each of the following:

1. List of documents.
2. List of systems.
3. List of equipment.
4. Table of contents.

B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.

C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.

D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 MANUALS, GENERAL

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name, address, and telephone number of Contractor.
6. Name and address of Landscape Architect.
7. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

   a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
   b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, crossreferenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch (215-by-280-mm) white bond paper.

5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

   a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
   b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for each of the following:

   1. Type of emergency.
   2. Emergency instructions.
   3. Emergency procedures.

B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

   1. Fire.
   2. Flood.
   3. Gas leak.
   4. Water leak.
   5. Power failure.
   6. Water outage.
   7. System, subsystem, or equipment failure.
   8. Chemical release or spill.

C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

D. Emergency Procedures: Include the following, as applicable:

   1. Instructions on stopping.
   2. Shutdown instructions for each type of emergency.
   3. Operating instructions for conditions outside normal operating limits.
   4. Required sequences for electric or electronic systems.
   5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions.
2. Performance and design criteria if Contractor is delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates. B. Descriptions:

Include the following:

1. Product name and model number.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts. C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.5 PRODUCT MAINTENANCE MANUAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:

1. Standard printed maintenance instructions and bulletins.
2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training videotape, if available.

E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.

B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.

1. Do not use original Project Record Documents as part of operation and maintenance manuals.
2. Comply with requirements of newly prepared Record Drawings in Division 1 Section "Project Record Documents."

G. Comply with Division 1 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION

SECTION 02100

DEMOLITION

PART 1 GENERAL

1.01 DESCRIPTION

A. Work includes, but is not limited to the following:

1. The Contractor shall provide all equipment, tools, materials, and labor necessary to complete the Work.

2. Completely coordinate with Work of all other trades.

3. Provide protection for all existing objects or conditions designated on the Drawings to remain on the site or return to the Owner.

4. Provide protection to prevent injury or damage to persons or adjacent properties.

5. Remove and dispose of demolished materials from the site as indicated on the drawings.

6. Comply with applicable codes and ordinances concerning demolition operations.

B. Definition: The term "demolition", as used herein, includes the removal and disposal of all existing objects (except for those objects designated to remain) down to the existing grade level or subgrade level to the extent indicated or as otherwise required to permit new construction and all other Work as described in this Section necessary to complete all Demolition Work.

C. Use of explosives will not be permitted.

1.02 PERMITS, ORDINANCES, ETC.

Procure and pay for all necessary permits or certificates required to complete the Demolition Work specified. Make any and all required notifications and comply with all applicable Federal, State, and Local ordinances concerning demolition operations.

1.03 JOB CONDITIONS

Visit the site and examine the existing conditions and observe the conditions under which the Work is to be performed. Notify the Owner of unsatisfactory conditions and do not proceed with the Work until unsatisfactory conditions have been corrected in a

manner acceptable to the Owner. Note all conditions as to character and extent of Work involved.

1.04 PROTECTION

A. Execute all Demolition Work in an orderly and careful manner with due consideration for any existing condition designated to remain. Provide protection to preserve existing items indicated to remain and to prevent injury or damage to persons or adjacent properties.

B. Use all means necessary to protect existing conditions designated to remain and adjacent properties. Avoid any encroachment on adjacent properties. In the event of damage or loss to any existing condition designated to remain or adjacent properties, immediately make all repairs and replacements necessary to the approval of the Owner at no additional cost to Owner.

C. Do not interfere with the normal traffic on roads, streets, walks, or use of adjacent properties. Provide alternate routes around closed or obstructed traffic ways as required by governing regulations.

D. Protect existing trees per plans.

1.05 CUTTING AND PATCHING

Cut existing sidewalks, roads, and curbs as required to complete Demolition Work. Pavement shall be cut vertically along straight lines forming the edges of the Demolition Work and so as not to damage the adjacent pavement. Repair all pavement as specified in Sections of the specification covering the applicable trades.

1.06 DUST CONTROL

Use all means necessary to prevent the spread of dust during performance of the Work of this Section; thoroughly moisten all surfaces as required to prevent dust being a nuisance to the public, neighbors, and concurrent performance of other work on the site.

PART 2 - PRODUCTS

2.01 OTHER MATERIALS

All other materials, not specifically described but required for proper completion of the Work of this Section, shall be as selected by the Contractor subject to approval by the Owner.

PART 3 - EXECUTION

3.01 PREPARATION

A. Notification

Notify the Owner at least two (2) full working days prior to commencing the Work of this Section.

B. Site Observation

1. Prior to all Work of this Section, carefully observe the entire site for all objects designated to be removed and to be preserved.

2. Contact the Underground Service Alert (U.S.A.) at 1-800-227-2600 to stake and mark the location of all existing utilities prior to the beginning of Work.

3. Locate all existing utility lines indicated on the Drawings to remain, and determine the requirements for their protection.

4. Locate, if any, all existing utility line indicated on the Drawings to be disconnected and capped, and determine all requirements for disconnecting and capping.

C. Clarification

1. The Drawings do not purport to show all objects existing on the site.

2. Before commencing the Work of this Section, verify with the Owner all objects to be removed and all objects to preserve.

D. Scheduling

1. Schedule all Work in a careful manner with all necessary consideration for adjacent properties and the general public.

2. Avoid interference with the use of, and passage to and from, adjacent properties.

3. Conduct operations so as not to interfere with the use of adjacent roads, streets, drives, walks, service lines, etc.

E. Disconnection of Utilities

Before starting site construction, arrange for the disconnection of all utility lines designated to be removed, relocated, or capped with the appropriate utility company. Utility company services for this Work shall be paid for by the Contractor.

F. Protection of Utilities

Retain and protect in operating condition all active utilities traversing the site designated to remain.

3.02 DEMOLITION OF OBJECTS

A. Remove and dispose of all existing objects (except for those objects designated to remain) down to existing grade level or subgrade level to the extent indicated or as otherwise required to permit new construction.
B. Tree Demolition – remove all of tree, tree trunk and roots, including below grade.

3.03 REQUIREMENTS FOR REMOVAL OF ASPHALT AND CONCRETE PAVEMENT

A. Remove asphalt pavement to neatly saw edges. Make saw cuts to a minimum depth of one (1) inch below the bottom surface of the pavement. Where only the surface of existing asphalt pavement is to be removed, obtain approval of method from the Owner, and provide a minimum laying depth of one (1) inch of new pavement material at the join line. Where asphalt pavement adjoins a trench, trim the edges adjacent to the trench to neat straight lines before resurfacing to ensure that all areas to be resurfaced are accessible to the rollers used to compact the subgrade or paving materials.

B. Remove concrete pavement to neatly sawed edges. Make saw cuts a minimum depth of one (1) inch below the bottom surface of the pavement. If a saw cut in concrete pavement falls within three (3) feet of an expansion joint, construction joint, cold joint or edge, move the concrete to the joint or edge. The edges of existing concrete pavement adjacent to trenches, where damaged subsequent to saw cutting of the pavement, saw cut again to neat straight lines for the purpose of removing the damaged pavement areas. Such saw cuts shall be either parallel to the original saw cuts or shall be cut on an angle which departs from the original saw cut not more than one (1) inch in each six (6) inches.

C. Concrete curbs, gutters, cross gutters, driveways and walks: Remove concrete to neatly sawed edges, with saw cuts made to a minimum depth of one and one-half (I -1 /2) inches. Concrete sidewalk of driveway to be removed shall be neatly sawed in straight lines, either parallel to the curb or at right angles to the alignment of the sidewalk. No section to be replaced shall be smaller than thirty (30) inches in either length or width. If the saw cut in sidewalk or driveway fall within thirty (30) inches of a construction joint, expansion joint, cold joint or edge, the concrete shall be

removed to the joint or edge, except that where the saw cut would fall within twelve (12) inches of a score mark, the saw cut shall be made in and along the score mark. Curb and gutter shall be sawed to a depth of one (1) inch below the bottom surface in a neat line at right angles to the curb face.

3.04 BACKFILL AND COMPACTION

All excavations left by the Demolition Work shall be filled and compacted to make the surface at these points conform in contour and density to that of the surrounding ground, and as specified per plan and these special provisions.

3.05 DISPOSAL OF DEBRIS

A. All material removed under this Contract, which is not to be salvaged or reused, or otherwise specified on the Plan shall become the property of the Contractor and be promptly disposed of. It shall be the responsibility of the Contractor to procure dumping facilities or other means of disposal for all items specified to be removed from the site. Storing or permitting refuse to accumulate on the site will not be permitted.

B. Disposal of all materials from the site shall be done in a lawful manner. Transport all refuse materials from the site without spilling on the streets.

C. Burning of refuse material on the site will not be permitted.

END OF SECTION

SECTION 02230

SITE CLEARING

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, material, equipment and services necessary to provide all work, complete in place, as indicated on Drawings and specified herein.

Work specified in this Section includes, but is not limited to the following:

1. Site preparation.
2. Tree protection.
3. Restore damaged improvements to original condition.
4. Existing Utilities.
5. Clearing and Grubbing.
6. Removing topsoil.
7. Removing existing improvements.
8. Backfill requirements.
9. Disposing of objectionable material.

B. Related Work Specified in Other Sections

1. SECTION 312000 – EARTHWORK

C. Related Documents

3. Section 311000 – Site Preparation.

D. Definitions

1. ANSI: American National Standards Institute.
2. CAL-OSHA: California Occupational Safety and Health Administration.
3. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay

lumps, gravel, and other objects more than 2-inches in diameter; and free of weeds, roots, and other deleterious materials.

1.02 SUBMITTALS

A. Follow Submittal procedure outlined in Administrative Requirements Specifications

B. Project Record Documents: Record actual locations of pipe mains, valve, connections and invert elevations. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.03 QUALITY ASSURANCE

A. Do not remove or prune trees without written approval from Owner.

B. Prune to the standards of the International Society of Arborists and to ANSI 300.

1.04 PROJECT CONDITIONS

A. Except for materials indicated to be stockpiled or to remain the Owner's property, cleared materials are the Contractor's property. Remove cleared materials from site and dispose of in lawful manner.

B. Unidentified Materials; if unidentified materials are discovered, including hazardous materials that will require additional removal other than is required by the Contract Documents, immediately report the discovery to the Owner.

C. If necessary, the Owner will arrange for any testing or analysis of the discovered materials and will provide instructions regarding the removal and disposal of the unidentified materials.

PART 2 PRODUCTS

2.01 SOIL MATERIALS

A. Backfill excavations resulting from demolition operations with on-site or import materials conforming to structural backfill defined in Section 312000 – Earthwork.

PART 3 EXECUTION

3.01 SITE PREPARATION

A. Protect and maintain benchmarks and survey control points during construction.

B. Locate and clearly flag trees and vegetation to remain or to be relocated.

C. Protect existing site improvements to remain during construction.

D. Verify existing conditions at the site and include all work evident by site inspection

whether or not shown on the Drawings.

3.02 TREE PROTECTION

A. Erect and maintain temporary fence around drip line of individual trees or around perimeter drip line of groups of trees to remain. Remove fence when construction is complete.

B. Do not store construction materials, debris, or excavated material within drip line of remaining trees.

C. Do not permit vehicles or equipment within drip line of remaining trees.

D. Do not excavate within drip line of remaining trees, unless otherwise indicated.

E. Where excavation for new construction is required within drip line of trees, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation edge as possible.

1. Cover exposed roots with burlap and water regularly.

2. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

3. Coat cut faces of roots more than 1-1/2-inches in diameter with an emulsified asphalt or other approved coating formulated for use on damaged plant tissues.

4. Cover exposed roots with wet burlap to prevent roots from drying out. Backfill with soil as soon as possible.

F. Also see Tree Protection requirements outlined on Construction Drawings.

3.03 RESTORATION

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

B. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, as directed by the Owner.

1. Employ a qualified, licensed arborist, to submit details of proposed repairs and to repair damage to trees and shrubs.

2. Replace trees that cannot be repaired and restored to full-growth status, as determined by the Owner.

3.04 UTILITIES

A. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed or

abandoned.

B. Arrange to shut off indicated utilities with utility companies or verify that utilities have been shut off.

C. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless authorized in writing by the Owner, and then only after arranging to provide temporary utility services according to requirements indicated.

D. Coordinate utility interruptions with utility company affected.

E. Do not proceed with utility interruptions without the permission of the Owner and utility company affected. Notify Owner and utility company affected two working days prior to utility interruptions.

F. Excavate and remove underground utilities that are indicated to be removed.

G. Securely close ends of abandoned piping with tight fitting plug or wall of concrete minimum 6-inches thick.

3.05 CLEARING AND GRUBBING

A. Clear the site and remove obstructions, shrubs, grass, and other vegetation to permit installation of new construction. Removal includes digging out stumps and obstructions and grubbing roots.

B. Remove trash, debris, logs, concrete, masonry and other waste materials.

C. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.

D. Completely remove stumps, roots, obstructions, and debris extending to a depth of 18-inches below subgrade.

E. Use only hand methods for grubbing within drip line of remaining trees.

F. In areas not to be further excavated, fill depressions resulting from site clearing. Place and compact satisfactory soil materials per the geotechnical investigation report, to be procured and provided by Contractor.

G. Clear undergrowth and deadwood without disturbing subsoil.

3.06 TOPSOIL STRIPPING

A. Remove sod and grass before stripping topsoil.

B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.

C. Remove trash, debris, weeds, roots, and other waste materials.

D. Stockpile topsoil materials designated to remain on site at a location approved by the Owner at a location away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.

E. Do not stockpile topsoil within drip line of remaining trees.

3.07 SITE IMPROVEMENTS

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

B. Remove slabs, paving, curbs, and gutters, as indicated. Where concrete slabs, curb, gutter and asphalt pavements are designated to be removed, remove bases and subbase to surface of underlying, undisturbed soil.

C. Unless the existing full-depth joints coincide with line of pavement demolition, neatly saw-cut to full depth the length of existing pavement to remain before removing existing pavement. Saw-cut faces vertically.

D. Remove driveways, curbs, gutters and sidewalks by saw cutting to full depth. If saw cut falls within 30-inches of a construction joint, expansions joint, score mark or edge, remove material to joint, mark or edge.

3.08 BACKFILL

A. Place and compact material in excavations and depressions remaining after site clearing in conformance with Section 312000 – Earthwork.

3.09 DISPOSAL

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

END OF SECTION

SECTION 02260
LANDSCAPE GRADING

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Provide all labor, materials services and equipment indicated on Drawings and/or herein specified to complete all Landscape Grading Work.

B. Landscape grading shall consist of importing topsoil to cap turf areas, importing topsoil to create landscape berming, importing topsoil for tree hole back fill, ripping, establishing finish grade to conform to the contours, grades, line and shapes of rough grades established on Engineer's plans. Work may also include loosening of compacted soils created during the course of construction.

C. Land alteration of existing topographic conditions to conform to the contours, grades, lines and shapes indicated on Engineer's and the Owner's plans.

D. Contractor shall furnish, place and settle all required backfill material to conform to the contours, grades, lines and shapes as indicated on the Drawings, and engineer's plans.

1.02 RELATED WORK

A. SECTION 328400 – PLANTING IRRIGATION

1.03 DEFINITIONS

A. Finish grade: Finish grade: Finish grade shall mean the establishment of grades to 0.10 feet plus or minus.

B. Grading intent: Spot elevations (grades) and contours are indicated based on the best available data. Owner's Representative's Drawings are referenced to provide site grading data. The intent is to maintain constant slopes between spot elevations. If a spot elevation is determined to be in error, or the difference in elevation between points change contact the Owner immediately for field adjustments of spot elevations.

1.04 JOB CONDITIONS

A. Visit the project site and examine the existing conditions under which the Work is to be performed. Note all conditions, as to character and extent of Work involved. This may include pot holing to determine depth of bedrock

1.05 EXISTING UTILITIES

A. Contractor is responsible to contact U.S.A (800-642-2444) to stake and mark the location of all existing utilities before commencing Work. Pot hole as required to determine and verify location and depth.

B. Retain and protect in operating condition all active utilities traversing the site designated to remain.

1.06 PROTECTION OF EXISTING CONDITIONS and ADJACENT PROPERTIES

A. Use all means necessary to protect existing conditions designated to remain, newly constructed conditions and adjacent properties. Avoid any encroachment on adjacent properties.

B. Prevent damage to existing bench marks, pavement, utility lines. In the event of damage or loss immediately make all repairs and replacements required to the Owner's approval at no additional cost to the Owner.

1.07 QUALITY ASSURANCE

A. Finish grade shall conform to contours, grades, lines and shapes, as indicated on Owner's Representative's Drawings, with uniform slopes between finish grades or between finish grades and existing grades.

B. Establish finish landscape grades in a continuous, uniform line, resulting in a uniform surface with no ridges, birdbaths or low spots.

C. Finish landscape grade tolerance shall be .04 feet plus or minus of final grades indicated on Drawings.

D. Slope grade away from buildings a minimum of two (2) percent in five (5) feet horizontal distance unless otherwise indicated on Drawings, or Owner's Representative's plans.

1.08 SUBMITTALS

A. Provide one (1) cubic foot sample of import topsoil material for the Owner's approval prior to delivery to the site, but in any case, prior to placement.

B. Procure and provide horticultural soils report of existing landscape soil after rough grade and submitted topsoil including information on soil texture, filtration rate, nutrient levels and organic matter. Include recommendation for amendment to be added to existing landscape soil and topsoil to mitigate any deficiencies.

PART 2 - PRODUCTS

2.01 ONSITE MATERIAL

A. Existing onsite excavated surplus material may be acceptable fill or top soil material, if approved by the Owner or Owner's representative and upon submittal of a horticultural soils report and possible amending of existing soil to match criteria specified in this

section for import top soil. Excavated surplus material not required for fill material or top soil shall be removed and legally disposed of off site.

2.02 IMPORTED TOPSOIL MATERIAL

A. Imported topsoil material shall be of friable sandy-loam texture free of refuse, roots, heavy or stiff clays, rocks over 1" in diameter , 15% by volume rock between 1/8" and 1", sticks, other deleterious matter.

B. Imported topsoil acidity range (Ph) shall be between 6.5 to 7.5, containing a minimum of 4% and a maximum of 25% organic matter.

C. Imported topsoil shall be free of all noxious weeds and other seeds.

D. Imported topsoil shall be amended as per soils report (refer to paragraph 1.08 B), at no additional cost to the Owner.

E. Topsoil shall be stock piled on site in an area free of rock and other deleterious materials. Owner reserves the right to reject topsoil once placed in proper location per Part 3 if deleterious materials mixed in to topsoil.

PART 3 - EXECUTION

3.01 GENERAL

A. Conduct work in an orderly manner. Dirt shall not be permitted to accumulate on streets or sidewalks nor to be washed into storm drains.

B. Use all means required to prevent the erosion of freshly graded areas during construction and until such a time as proposed hard surfaces and landscaping have been constructed.

C. Excess on site material after material has been used to bring site to finished grade shall be removed and legally disposed of off site.

D. If there is not enough site material to bring site to grade, contractor shall import topsoil.

3.02 RIPPING

A. If, during the course of construction, landscape areas become compacted to greater than 90% relative density, landscape areas with the exception of areas beneath the canopies of existing trees shall be ripped and cross ripped to a depth of 12".

B. Rip and cross rip to a depth of 6 inches all areas exposed by engineering cut operations. Remove all rock one inch or larger within 6 inches of finish grades in all non-hydro mulch planted areas.

C. Rip and cross rip to a depth of 6 inches all turf areas prior to the placement of import topsoil.

3.03 TOP SOIL PLACEMENT

A. Place topsoil to contours indicated on plans to create landscape berming.

B. Place topsoil in any way as indicated on plans

C. If insufficient on site soil is available, then contractor shall supply import topsoil.

3.04 FINISH LANDSCAPE GRADING

A. Finish grade shall conform, after settling, to shapes, spot elevations and contours as indicated on Owner's Representative's Drawings, with uniform levels or slopes between finish elevations or between finish elevations and existing elevations.

B. Fine grade all planting areas to a smooth, loose and uniform surface. Remove all extraneous matter 1" or larger in size and dispose of off site to create a smooth surface. Finish grades shall slope to drain, without water pockets or irregularities (humps or hollows). Grades shall be or uniform slope between points of fixed elevation establishing vertical curves or roundings at abrupt changes in slope.

C. Shrub/ground cover planting areas shall be graded two and one-half (4-1/2) inches below adjacent paved areas, sidewalks, valve boxes, headers, drains, etc. in order to receive two (4) inch depth of mulch, establishing final grade one-half (1/2) inches below these surfaces.

D. Turf areas shall be graded one and one half (1-1/2) inches below adjacent paved areas, sidewalks, valve boxes, headers, drains, etc. in order to receive sod.

3.05 FINISH LANDSCAPE GRADING OBSERVATION

A. Soil preparation: comply with SECTION 328400 - LANDSCAPE INSTALLATION prior to finish grading operations

B. Finish grade shall conform, after compaction, to shapes, spot elevations and contours as indicated on Drawings, with uniform levels or slopes between finish elevations or between finish elevations and existing elevations.

C. The Contractor is responsible to spread excess excavated soil material from plant pits in surrounding planting beds.

D. Fine grade topsoil in all planting areas eliminating rough and low areas to insure positive drainage, to a smooth, loose and uniform surface. Maintain levels, profiles and contours of sub-grades.

E. Remove stones, roots, grass, weeds, debris and other foreign material while spreading, in excess of one inch in diameter.

F. Shrub/ground cover planting areas shall be graded two and one-half (4-1/2) inches below adjacent paved areas, sidewalks, valve boxes, headers, drains, etc. in order to receive two (4) inch depth of mulch, establishing final grade one-half (1/2) inches below these surfaces

END OF SECTION

SECTION 02316

FILL AND BACKFILL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Filling and compacting for concrete paving and rigid concrete pavements subject to traffic loadings.
B. Backfilling and compacting for utilities to utility main connections.

1.02 RELATED SECTIONS

A. General Conditions and Special Provisions for Air and Water Pollution Control and Dust Control
B. Section 02260 – Landscape Grading
C. Section 030000 – Concrete
D. Section 328400 – Planting Irrigation

1.03 REFERENCES

A. ASTM C 136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 1996a.
B. ASTM D 1557 - Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN mlm3)); 1991 (Reapproved 1998).
C. ASTM D 2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System); 1998.
D. ASTM D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth); 1996.
E. ASTM D 2974 - Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils; 1996.
E. ASTM D 3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth); 1996.
F. ASTM D 4318 - Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils; 1998.

1.04 PROJECT CONDITIONS

A. Provide sufficient quantities of fill to meet project schedule and requirements. When necessary, store materials on site in advance of need.
B. Verify that survey benchmarks and intended elevations for the Work are as indicated.

PART 2 PRODUCTS

2.01 FILL MATERIALS

A. Engineered Fill: Subsoil excavated on-site.
   1. Free of lumps larger than 3 inches, rocks larger than 2 inches, and debris.
   2. Conforming to ASTM D 2487 Group Symbol CL, ML, SM, SP.

B. Engineered Fill: Imported borrow.
   1. Graded in accordance with ASTM C 136, within the following limits:
      a. 3 inch sieve: 100 percent passing.
      b. 3/4 inch sieve: 70 to 100 percent passing.
      c. No. 4 sieve: 50 to 100 percent passing.
      d. 40 sieve: 30 to 100 percent passing.
      e. 50: 30 to 100 percent passing.
      f. No. 200: 30 to 70 percent passing.
   2. Free of lumps larger than 3 inches, rocks larger than 2 inches, and debris.
   3. Conforming to ASTM D 2487 Group Symbol CL, ML, SM, SP.
   4. Liquid limit < 30. Plasticity Index < 12.
   5. Organic content less than 3%.
   6. Expansion potential (UBC 18-2) less than 20.
   7. Maximum Dry Density more than 105 pcf.
C. Topsoil: See Section 02260.
D. Class 2 Aggregate Base: See Section 02721 Aggregate Base Course.

2.02 SOURCE QUALITY CONTROL

A. Where import fill materials are specified by reference to a specific standard, test and analyze samples for compliance before delivery to site.
B. If tests indicate materials do not meet specified requirements, change material and retest.

PART 3 EXECUTION

3.01 EXAMINATION

A. Identify required lines, levels, contours, and datum locations.
B. See Section 02260 for additional requirements.

3.02 PREPARATION

A. Scarify all areas to receive engineered fill and subgrade surfaces to a depth of 12 inches.
B. During wet weather or unstable soil conditions, the Contractor shall have the Owner's Representative observe all areas to receive engineered fill and subgrade surfaces prior to implementation of remedial measures.
   1. Upon approval of the Landscape Owner's Representative, all unstable areas to receive engineered fill and subgrade surfaces shall be disked or ripped to a

minimum depth of 24 inches to allow exposed soil to dry. Depth and frequency of disking and ripping shall be determined by the Owner's Representative upon observation of the unstable soil conditions.

2. Upon approval of the Owner's Representative, all unstable areas to receive engineered fill and subgrade surfaces shall be over excavated 12 to 24 inches below existing grade and be replaced with aggregate base or coarse gravel underlain by geotextile fabric. Final depth of removal shall be determined by the Owner's Representative upon observation of the unstable soil conditions. The geotextile fabric shall be Amoco 2016 (woven) or approved equivalent, placed in accordance with manufacturer's recommendations.

C. The Contractor shall have the Owner's Representative observe and probe bottom of finish subgrade for its stability within existing trench fill extending to a width of 15 feet on each side of existing sanitary sewer pipelines beneath new pavement improvements.
   1. If loose or soft material is encountered, the existing trench fill shall be removed to a depth of two feet below finished subgrade elevation. The Contractor shall have the Owner's Representative observe and probe the bottom of the excavation for its stability prior to placing compacted engineered fill. If loose or soft material is encountered, geotextile/stabilizing fabric, Amoco 2016 (woven) or approved equivalent, shall be placed at the bottom of the excavation.
D. Recompact between 90 and 95 percent of maximum dry density at a uniform moisture content between 2 and 5 percent above optimum moisture content at the time of compaction.
E. Recompact to 95 percent of maximum dry density at a uniform moisture content between 2 and 5 percent above optimum moisture content at the time of compaction in the upper 12 inches of subgrade in all areas to support asphalt or rigid concrete pavements.
F. Until ready to fill, maintain excavations and prevent loose soil from falling into excavation.

3.03 FILLING

A. Fill to contours and elevations indicated using unfrozen materials.
B. Fill up to subgrade elevations unless otherwise indicated.
C. Employ a placement method that does not disturb or damage other work.
D. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
E. Uniformly moisture-conditioned to between 2 and 5 percent above optimum moisture content of fill materials to attain required compaction density.
F. Soil Fill: Place and compact material in equal continuous layers not exceeding 8 inches loose thickness.
G. Correct areas that are over-excavated.
H. Compaction Density Unless Otherwise Specified or Indicated:
   1. Between 90 and 95 percent of maximum dry density at a uniform moisture content between 2 and 5 percent above optimum moisture content at the time of compaction.
   2. At 95 percent of maximum dry density in the upper 6 inches of subgrade in all areas to support asphalt or rigid concrete pavements.

I. Reshape and re-compact fills subjected to construction vehicular traffic.

3.04 FILL AT SPECIFIC LOCATIONS

A. Use engineered fill unless otherwise specified or indicated.
B. Engineered fill at areas to receive rigid concrete pavements:
   1. Fill up to subgrade elevations.
   2. Maximum depth per lift: 8 inches, loose thickness.
   3. Between 88 and 92 percent of maximum dry density at a uniform moisture content at between 2 and 5 percent above optimum moisture content at the time of compaction.
   4. Compact upper 6 inches of subgrade to minimum 95 percent of maximum dry density at between 2 and 5 percent above optimum moisture content at the time of compaction.
C. At Lawn Areas: See Section 02260 Landscape Grading
D. At Planting Areas Other Than Lawns: See Section 02260 Landscape Grading
E. Trench Backfilling:
   1. See Site Drainage, Potable Water Supply Specifications
   2. See Section 328400 Planting Irrigation

3.05 TOLERANCES

A. Top Surface of General Filling: See Section 02260 Landscape Grading
B. Top Surface of Filling Under Paved Areas: Plus or minus 0.05 foot from required elevations.

3.06 FIELD QUALITY CONTROL

A. Compaction density testing will be performed on compacted fill in accordance with ASTM D2922.
B. Results will be evaluated in relation to compaction curve determined by testing un-compacted material in accordance with ASTM D 1557 ("modified Proctor").

END OF SECTION

SECTION 02721

AGGREGATE BASE COURSE – SITE CONCRETE PAVING AND FOOTINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aggregate base course.
B. Paving aggregates.

1.02 RELATED SECTIONS

A. Section 02260 – Landscape Grading.
B. Section 02316 - Fill and Backfill.
C. Special Provisions: Aggregate Base, Asphalt Concrete, Storm Drain Pipe, Sanitary Sewer, Sewer and Storm Drain Manholes, Potable Water Supply and Miscellaneous Concrete Construction
D. Section 030000 – Concrete
E. Section 328400 – Planting Irrigation

1.03 REFERENCES

A. ASTM C 136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates; 1996a.
B. ASTM D 1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN m/m3)); 1991 (Reapproved 1998).
C. ASTM D 2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System); 1998.
D. ASTM D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth); 1996.
E. ASTM D 3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth); 1996.

1.04 SUBMITTALS

A. Materials Sources: Submit name of imported materials source.
B. Aggregate Composition Test Reports: Results of laboratory tests on proposed and actual materials used.
C. Compaction Density Test Reports.

1.05 PROJECT CONDITIONS

A. Provide sufficient quantities of aggregate to meet project schedule and requirements. When necessary, store materials on site in advance of need.

B. Verify that survey benchmarks and intended elevations for the Work are as indicated.

PART 2 PRODUCTS

2.01 MATERIALS

A. Aggregate Base: Coarse aggregate, conforming to Section 26 of the State of California Highway Department Standards for 3/4-inch maximum Class 2 Aggregate Base.

2.02 SOURCE QUALITY CONTROL

A. If tests indicate materials do not meet specified requirements, change material and retest.
B. Provide materials of each type from same source throughout the Work.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify subgrade has been inspected, gradients and elevations are correct, and is moist but not pumping.

A.02 REPARATION

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

3.03 INSTALLATION

A. Under Concrete Paving and Footings:
   1. Place aggregate base to a total compacted thickness as indicated on the Project Drawings.
   2. Compact to 95 percent of maximum dry density.

3.04 TOLERANCES

A. Variation From Design Elevation: Within 0.05 feet.

3.05 FIELD QUALITY CONTROL

A. Compaction density testing will be performed on compacted aggregate base course in accordance with ASTM D2922 and ASTM D3017.
B. If tests indicate work does not meet specified requirements, remove work, replace and retest.

C. Proof roll compacted aggregate at surfaces that will be under paving.

3.06 CLEAN-UP

A. Remove unused stockpiled materials, leave area in a clean and neat condition in accordance with Section 02260.

END OF SECTION

SECTION 02764

PAVEMENT JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Expansion and contraction joints within cement concrete pavement.
2. Joints between cement concrete and asphalt pavement.
3. Related Sections include the following:
   i. Section 030000 - Concrete for constructing joints in concrete pavement.

1.3 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples for Verification: For each type and color of joint sealant required. Install joint-sealant samples in 1/2-inch- (13-mm-) wide joints formed between two 6inch- (150-mm-) long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

C. Qualification Data: For Installer and testing agency.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and approved by manufacturer.

B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multi-component materials.

B. Store and handle materials to comply with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.6 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.
2. When joint substrates are wet or covered with frost.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.

2.2 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer based on testing and field experience.

B. Colors of Exposed Joint Sealants: As selected by Owner’s Representative from manufacturer's full range.

2.3 COLD-APPLIED JOINT SEALANTS

A. Multicomponent Jet-Fuel-Resistant Sealant for Concrete: Pourable, chemically curing elastomeric formulation complying with the following requirements for formulation and with ASTM C 920 for type, grade, class, and uses indicated:

1. Urethane Formulation: Type M; Grade P; Class 12-1/2; Uses T, M, and, as applicable to joint substrates indicated, O.

a. Products:

1) Pecora Corporation; Urexpan NR-300.

2. Coal-Tar-Modified Polymer Formulation: Type M; Grade P; Class 25; Uses T and, as applicable to joint substrates indicated, O.

a. Products:

1) Meadows, W. R., Inc.; Sealtight Gardox.

3. Bitumen-Modified Urethane Formulation: Type M; Grade P; Class 25; Uses T, M, and, as applicable to joint substrates indicated, O.

a. Products:

1) Tremco Sealant/Waterproofing Division; Vulkem 202.

B. Single-Component Jet-Fuel-Resistant Urethane Sealant for Concrete: Singlecomponent, pourable, coal-tar-modified, urethane formulation complying with ASTM C 920 for Type S; Grade P; Class 25; Uses T, M, and, as applicable to joint substrates indicated, O.

1. Products:

a. Sonneborn, Div. of ChemRex, Inc.; Sonomeric 1.

C. Type NS Silicone Sealant for Concrete: Single-component, low-modulus, neutralcuring, nonsag silicone sealant complying with ASTM D 5893 for Type NS.

1. Products:

a. Crafco Inc.; RoadSaver Silicone.
b. Dow Corning Corporation; 888.

D. Type SL Silicone Sealant for Concrete and Asphalt: Single-component, lowmodulus, neutral-curing, self-leveling silicone sealant complying with ASTM D 5893 for Type SL.

1. Products:

a. Crafco Inc.; RoadSaver Silicone SL.
b. Dow Corning Corporation; 890-SL.

E. Multicomponent Low-Modulus Sealant for Concrete and Asphalt: Proprietary formulation consisting of reactive petropolymer and activator components producing a pourable, self-leveling sealant.

1. Products:

a. Meadows, W. R., Inc.; Sof-Seal.

2.4 HOT-APPLIED JOINT SEALANTS

A. Jet-Fuel-Resistant Elastomeric Sealant for Concrete: Single-component formulation complying with ASTM D 3569.

1. Products:

a. Crafco Inc.; Superseal 444/777.
b. Meadows, W. R., Inc.; Poly-Jet 3569.

B. Jet-Fuel-Resistant Sealant for Concrete and Tar Concrete: Single-component formulation complying with ASTM D 3581.

1. Products:

a. Crafco Inc.; Superseal 1614A.
b. Meadows, W. R., Inc.; Poly-Jet 1614.
c. Meadows, W. R., Inc.; Poly-Jet 3406.
d. Meadows, W. R., Inc.; Poly-Jet 3569.

C. Elastomeric Sealant for Concrete: Single-component formulation complying with ASTM D 3406.

1. Products:

a. Crafco Inc.; Superseal 444/777.
b. Meadows, W. R., Inc.; Poly-Jet 3406.

D. Sealant for Concrete and Asphalt: Single-component formulation complying with ASTM D 3405.

1. Products:

a. Koch Materials Company; Product No. 9005.
b. Koch Materials Company; Product No. 9030.
c. Meadows, W. R., Inc.; Sealtight Hi-Spec.

2.5 JOINT-SEALANT BACKER MATERIALS

A. General: Provide joint-sealant backer materials that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by joint-sealant manufacturer based on field experience and laboratory testing.

B. Round Backer Rods for Cold- and Hot-Applied Sealants: ASTM D 5249, Type 1, of diameter and density required to control sealant depth and prevent bottom-side adhesion of sealant.

C. Backer Strips for Cold- and Hot-Applied Sealants: ASTM D 5249; Type 2; of thickness and width required to control sealant depth, prevent bottom-side adhesion of sealant, and fill remainder of joint opening under sealant.

D. Round Backer Rods for Cold-Applied Sealants: ASTM D 5249, Type 3, of diameter and density required to control sealant depth and prevent bottom-side adhesion of sealant.

2.6 PRIMERS

A. Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.

B. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install backer materials of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of backer materials.
2. Do not stretch, twist, puncture, or tear backer materials.
3. Remove absorbent backer materials that have become wet before sealant application and replace them with dry materials.

D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses provided for each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealants from surfaces adjacent to joint.
2. Use tooling agents that are approved in writing by joint-sealant manufacturer and that do not discolor sealants or adjacent surfaces.

F. Provide joint configuration to comply with joint-sealant manufacturer's written instructions, unless otherwise indicated.

G. Provide recessed joint configuration for silicone sealants of recess depth and at locations indicated.

3.4 CLEANING

A. Clean off excess sealants or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately and replace with joint sealant so installations with repaired areas are indistinguishable from the original work.

END OF SECTION

SECTION 02905

LANDSCAPE INSTALLATION

PART I - GENERAL

1.01 CONDITIONS

A. The general provisions of the Contract, including General and Supplementary Conditions and General Requirements (if any) apply to the work specified in this Section.

1.02 SCOPE OF WORK

A. Furnish all labor, material, equipment and services necessary to provide all landscape work, complete in place, as indicated on Drawings and specified herein.

Work specified in this Section, but is not limited to the following:

1. Soil preparation
2. Decomposed Granite Paving
3. Planting
4. Fertilizer
5. Tree Staking
6. Sodding
7. Clean-up

B. Related Work Specified in Other Sections

1. SECTION 02260 - **LANDSCAPE GRADING**
2. SECTION 320190.13 – **EXTERIOR IMPROVEMENTS AND LANDSCAPE MAINTENANCE**
3. SECTION 328400 – **PLANTING IRRIGATION**

1.03 QUALITY ASSURANCE

A. Source Quality Control

1. Submit documentation to the Owner at least sixty (60) days prior to start of planting that all plant material has been ordered. Arrange procedure for observation of plant material with the Owner at time of submission.

2. Plants shall be subject to observation and approval of the Owner upon delivery for conformity to specifications. Such approval shall not impair the right of observation and rejection during progress of the work.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Delivery

1. The Contractor, upon request by the Owner, shall provide receipts, delivery tickets, load tickets, etc. of all items delivered to the job site to verify products and total quantities.

2. Deliver fertilizer to site in original unopened containers bearing manufacturer's guaranteed chemical analysis, name trademark, and conformance to State Law.

3. Deliver plants with legible identification labels.

a. Label trees, evergreens, bundles of containers of like shrubs, or ground cover plants.
b. State correct plant name and size indicated on plant list.
c. Use durable waterproof labels with water-resistant ink which will remain legible for at least sixty (60) days.

6. Protect plant material during delivery to prevent damage to root ball or desiccation of leaves.

7. The Contractor shall notify the Owner forty-eight (48) hours in advance of delivery of all plant materials for observation either at the site or at the local nursery.

B. Storage

1. Store plant material in shade and protect from weather.

2. Maintain and protect plant material. Contractor shall be responsible for replacement of material due to theft or vandalism.

C. Handling

1. Do not drop plant materials.

2. Do not pick up container plant material by stems or trunks.

1.05 JOB CONDITIONS

A. Planting: Perform actual planting only when weather and soil conditions are suitable in accordance with locally accepted practice.

B. Scheduling: Install trees, shrubs, and ground cover plant material before lawn areas are installed and after irrigation system is operable.

C. Protect work and materials from damage due to construction operations by other contractors and trades and by vandalism. Maintain protection during installation.

1.06 SAMPLES AND TESTS

A. The Owner reserves the right to take and analyze samples of materials for conformity to specifications at any time. The Contractor shall furnish samples upon request by Owner. Rejected materials shall be immediately removed from the site at Contractor's expense. Cost of testing of materials not meeting specifications shall be paid by the Contractor.

B. Refer to provided horticultural soils report for bid purposes. Contractor to provide a horticultural soils report of existing landscape soil after rough grade and submitted topsoil including information on soil texture, filtration rate, nutrient levels and organic matter. Include recommendation for amendment to be added to existing landscape soil and topsoil to mitigate any deficiencies.

1.07 GUARANTEE AND REPLACEMENT

A. Guarantee: All plant material and other materials installed under the Contract shall be guaranteed against any and all poor, inadequate or inferior materials and/or workmanship for a period of one (1) year. Any plant found to be dead or not in a satisfactory or healthy condition due to faulty materials, workmanship, or improper maintenance as determined by the, shall be replaced by the Contractor at his expense.

B. Replacement: Any materials found to be dead, missing or not in a satisfactory or healthy condition during the Contract period shall be replaced immediately. The Owner shall be the sole judge as to the condition of material. Material to be replaced within the guarantee period shall be replaced by the Contractor within fifteen (15) days of written notification by the Owner. All replacement materials and installation shall comply with the Drawings and Specifications.

PART 2 - PRODUCTS

2.01 GENERAL

All materials shall be of standard, approved and first-grade quality and shall be in prime condition when installed and accepted. Any commercially processed or packaged material shall be delivered to the site in the original unopened container bearing the manufacturer's guaranteed analysis. The Contractor shall supply the Owner with a sample

of all supplied materials accompanied by analytical data from an approved laboratory source illustrating compliance of bearing the manufacturer's guaranteed analysis.

2.02 PRODUCTS

A. Soil Conditioner

1. Gro-Power Plus: Humus (bacteria included based fertilizer and soil conditioner with soil penetrant shall consist of the following percents by weight:

5 % nitrogen
3 % phosphoric acid
1 % potash
50 % humus
15 % humic acids

B. Soil Amendment

1. Nitrogen Stabilized Shavings: 0.56 to 0.84% N based on dry weight for fir bark mulch, treated with relative form of nitrogen (NH3).

a. Particle Size: 95% - 100% passing 6.35 mm standard sieve.
80% - 100% passing 2.33 mm standard sieve.
b. Salinity: The saturation extract conductivity shall not exceed 3.5 mil/centimeter at 25 degrees (25°) centigrade as determined by saturation extract method.
c. Iron Content: Minimum 0.08% dilute acid soluble Fe on dry weight basis.
d. Ash: 0 - 6.0% (dry weight)

C. Fertilizer

1. Fertilizer: Shall be Gro-Power Plus (bacteria included) with soil penetrant and shall consist of the following percents by weight:

5% nitrogen
3% phosphoric acid
1% potash
50% humus
15% humic acid

2. Fertilizer: Shall consist of the following percents by weight:

6% nitrogen
20% phosphoric acid
20% potash

3. Ammonia Sulfate: Shall consist of the following percents by weight:

21% nitrogen
0% phosphoric acid
0% potash

4. Turf Starter Fertilizer: Shall consist of the following percents by weight:

   16% nitrogen
   6% phosphoric acid
   8% potash

5. Planting Tablets: Slow-release 21 gram tablets as manufactured by Agriform or approved equal, containing the following percent-ages of nutrients by weight:

   20 % nitrogen
   10 % phosphoric acid
   5 % potash

6. Inoculum: Shall be Grow-Life Mycorrhizal Inoculum / Soil Conditioner

D. Imported Soil

1. Imported soil shall be obtained from a source approved by the Owner's Representative.

2. Imported topsoil shall be of friable sandy-loam texture free of refuse, roots, heavy or stiff clay, rocks, sticks, brush or other deleterious materials. Topsoil acidity range (pH) shall be between 6.5 to 7.5 containing a minimum of 4% and a maximum of 25% organic matter. Topsoil shall be free of all noxious weeds. Topsoil samples and analysis shall be submitted to the Owner's Representative for approval prior to delivery of any soil to the project site. Should the Owner's Representative reject any portion of the delivered soil, for any reason, it shall be removed immediately at no cost to the Owner.

3. Topsoil, if rejected, shall be amended to meet specifications. Submit amended topsoil analysis to Owner's Representative for verification.

4. See also Landscape Grading Section 02260.

E. Plant Material

1. The plant material indicated on the Drawings by the listed names shall conform to "Standardized Plant Names", second edition, except for names not covered there in, the established customs of the nursery trade is followed. All plants shall be true to name, above one of each bundle or lot shall be tagged with the name and size of the plant, in accordance with the standards of practice recommended by the American Association of Nurserymen. All plant materials shall meet the specifications of Federal, State, County, and municipal laws, requiring observation for plant diseases and insect infestations. Plants shall be symmetrical,

typical for variety and species, sound, healthy, vigorous, free from plant diseases, insect pests or other eggs, and shall have healthy, normal root systems, while filling their containers, but not to the point of being root bound. Use only plant materials that are first class representative of the species and cultivars specifies and that conform to all State and local laws governing the sale, transportation, and observation of plant materials. Plants shall have straight, single trunks, unless otherwise specified on the plans. Those specified to be multi-trunk shall have at least three (3) main leaders from the base. Any and all plants that have any encircling roots (not root bound) shall have root balls lightly slashed on a minimum of three (3) sides to stop encircling root growth. The height and spread of all plant materials shall be measured with branches in their normal position. Sizes of plants shall be as stated on the plant list, five and fifteen (5 & 15) gallon can container stock shall have been grown in that container not less than six (6) months, but shall not have been overgrown in the containers so as to have become root bound.

2. The size of the plants will correspond with that normally expected for species and variety of commercially available nursery stock or as specified in the Special Conditions or Drawings. The minimum acceptable size of all plants, measured before pruning with the branches in normal position, shall conform with the measurements, if any, specified on the Drawings in the list of plants to be furnished. Plants larger in size than specified may be used with the approval of the Owner, but if the use of larger plants is approved, the ball of earth or spread of roots for each plant will be increased proportionally. Plant material shall conform to the following Specifications for container stock:

SHRUBS

SIZE	TYPE	EXAMPLE	HEIGHT	SPREAD	CALIPER
1 Gal.	low growing	Pitt. tobira - etc.	8-10"	6-8"	
1 Gal.	tall growing	Pitt. eugen. - etc.	10-12"	6-8"	
5 Gal.	low growing	Pitt. tobira - etc.	15-18"	15-18"	
5 Gal.	tall growing	Pitt. eugen. - etc,	24-30"	15-18"	
15 Gal.	low growing	Pitt. tobira - etc.	30-36"	30-36"	
15 Gal.	tall growing	Pitt eugen. - etc.	42-48"	36-42"	

TREES

5 Gal.	slow growing	Quercus - etc.	5-6'	12-18"	1/4 - 1/2"
5 Gal.	fast growing	Euc. - Prunus - etc.	6-7'	12-18"	1/2 - 3/4"
15 Gal.	slow growing	Quercus - Pyrus - etc.	7-8'	24-30"	3/4 - 1"
15 Gal.	fast growing	Euc. - Prunus - etc.	8-10'	30-36"	1- 1 1/4"
24" Box	slow growing	Quercus - Pyrus - etc.	8-10'	3-4'	1 1/2-1 3/4"
24" Box	fast growing	Euc. - Prunus - etc.	10-12'	4-5'	1 3/4-2 1/2
30" Box	slow growing	Quercus - Pyrus - etc.	12-14'	6-7'	2 1/2 - 3"
30" Box	fast growing	Euc. - Prunus - etc.	12-14'	6-7'	2 1/2 - 3"
36" Box	slow growing	Quercus - Pyrus - etc.	14-16'	8-10'	2 1/2 - 3"
36" Box	fast growing	Euc. - Prunus - etc.	14-16'	8-10'	2 1/2 - 3"
36" Box	fast growing	Euc.- Prunus - etc.	14-16'	8-10'	2 1/2 - 3"

3. All plants not conforming to the requirements herein specified, shall be considered defective and such plants, whether in place or not, shall be marked as rejected and immediately removed from the site of the work and replaced with

new plants at the Contractor's expense. The plants shall be of the species, variety, size, and condition specified herein or as shown on the Drawings. Under no conditions will there be any substitution of plants or sizes listed on the plans, except with the expressed written approval of the Owner.

4. At no time shall trees or plant materials be pruned, trimmed or topped prior to delivery and any alteration of their shape shall be conducted only with the approval and when in the presence of the Owner and/or as noted on the Planting Specifications.

5. Nursery Grown and Collected Stock

   a. Plant materials shall conform with the best edition of ANSI Z60.1-1990 American Standard for Nursery Stock.
   b. Grown under climatic conditions similar to those in locality of project.
   c. Container-grown stock in vigorous, healthy condition, not root bound or with root system hardened off.
   d. Use only linear stock plant material which is well established in removable containers or formed homogeneous soil sections.

6. Ground Cover: Ground cover plants shall be grown in flats, peat pots, or taken as cuttings, as indicated on the plans. Flat grown plants (rooted cuttings) shall remain in those flats until transplanting. The flat's soil shall contain sufficient moisture so that it will not fall apart when lifting the plants. If plants from peat pots are used, the pots shall be protected at all times prior to planting to prevent unnecessary drying of the rootball.

F. Tree Staking Material

1. Stakes for Tree Support

   a. Wood Tree Stakes: Lodge pole pine stakes full-length treated with copper naphthanate. Minimum nominal size: two inches in diameter x eight feet (2"x 8') long and pointed at one (1) end (adjust length to fit tree). Stakes shall be free from knots, checks, splits, or disfigurements.

2. Ties

   a. 24" length cinch tie as manufactured by V.I.T. Company 1-714-871-2309 or approved equal.

3. Duckbill Total System tree anchor kit with white vinyl coated cable by Foresight Products, Inc., 1-800-325-5360.

   a. Safety sleeve one-half (1/2) inch black polyethylene tubing.

G. Mulch

1. Mulch shall be walk-on fir bark mulch as manufactured by Lassen Forest Products, Red Bluff CA., 1-800-621-8557 or approved equal.

2. The mulch shall consist of fir bark mulch with a particle range of three-quarter to one and one-half (3/4 -1 1/2) inch in diameter. Shredded redwood bark ("gorilla hair") is not acceptable.

H. Sod

1. Sod varieties shall be as specified on Drawings. Sod shall be healthy, weed free, and obtained from a certified sod growing nursery or farm.

2. All sod shall be cut within twenty-four (24) hours prior to installation.

L. Fungicide

1. "Subdue" (Cibiba-Geigy) or approved equal.

2. Sod Planting – Fungicide labeled for fungi known to effect turf grass in Northern Central Valley or Northern California.

M. Pre-emergent

1. Pre-emergent, as approved by the Owner's Representative - prevent annual weed development in hydromulch applications. Do not use in hydromulch mixes incorporating annual wildflower or grass seeds.

N. Weed Control

1. Use Enide (Upjohn), Dymid (Elanco Products Co.), Treflan, Eptan, Surflan or approved equal.

O. Root Barrier

1. By Deep Root Corp. model numbers UB-18-2 or approved equal.

P. Miscellaneous Materials

1. Sand: wash river sand or equal.

2. Tree wound paint: as approved. Morrison Tree Seal, Cabot Tree Paint, or approved equal.

PART 3 - EXECUTION

3.01 OBSERVATION

The Owner's Representative to verify that topsoil has been imported, and final grades have been established prior to beginning planting operations. The Owner to observe, shrubs and liner stock plant material for injury, insect infestation and trees and shrubs for improper pruning. Do not begin planting of trees until deficiencies are corrected or plants replaced.

3.02 LAYOUT OF PLANTING AREAS

A. Stake or mark with lime locations for plants and outline of planting beds on ground. Do not begin excavation until plant locations and plant beds are acceptable to the Owner's Representative. The irrigation system shall be operational and approved prior to planting.

B. Locations for plants and outlines of areas to be planted shall be marked on the ground by the Contractor before any plant pits are dug. All such locations shall be approved by the Owner's Representative. If an underground construction or utility line is discovered prior to work, other locations for planting may be selected by the Owner's Representative.

3.03 INSTALLATION

A. Preparation of planting areas:

1. Amend soil per recommendations of horticultural soils report provided by contractor.

2. All soil areas shall be compacted and settled by application of heavy irrigation to a minimum depth of twelve (12) inches.

3. After grading and de-rocking, and prior to planting, incorporate amendments in Section 02905 Paragraph 2.02 and per soils report to a depth of six (6) inches.

4. At time of planting, the top six (6) inches of all areas to be planted shall be free of stones, stumps, or other deleterious matter one (1) inch in diameter or larger, and shall be free from all wire plaster, or similar objects that would be a hindrance to planting and maintenance. All rock larger than 1 inch to be removed by mechanical means, either by sieve for loose rock and by heavy equipment if solid bedrock.

B. Final Grades

1. Finished grading shall insure proper drainage of the site. Conform to specification SECTION 02260 - **LANDSCAPE GRADING**.

2. The following areas shall be graded so that the final grades shall be established below adjacent paved areas, sidewalks, valve boxes, clean outs, area drains, curbs, etc. as follows:

a. Shrub/ground cover areas: 2-1/2 inches

b. Sod areas: 1-1/2 inches

3. Surface drainage shall be away from all building foundations, where applicable.

4. Dispose of excess or unacceptable soil from the site.

3.04 PLANT INSTALLATION

A. General

1. Actual planting shall be performed during those periods when weather and soil conditions are suitable and in accordance with locally accepted practice, as approved by the Owner.

2. Only as many plants as can be planted and watered on that same day shall be distributed in a planting area.

3. Container shall be opened and plants shall be removed in such a manner that the ball of earth surrounding the roots is not broken and they shall be planted and watered as herein specified immediately after removal from the containers. Containers shall not be opened prior to placing the plants in the planting area.

B. Layout of Major Plantings

1. Locations for plants and outlines of areas to be planted shall be marked on the ground by the Contractor before any plant pits are dug. All such locations shall be approved by the Owner. If an underground construction or utility line is discovered prior to work, other locations for planting may be selected by the Owner.

C. Planting of Trees and Shrubs

1. Excavation for planting shall include the stripping and stocking of all acceptable topsoil encountered within the areas to be excavated for trenches, tree holes, plant pits and planting beds.

2. Excess soil generated from the planting holes and not used as backfill or in establishing the final grades shall be removed from the site.

3. Excavating for Planting:

a. Shape

i. Vertical sides and flat bottom.
ii. Plant pits to be square for box material, circular for canned material.
iii. Scarify sides and bottom of each pit.

b. Size: All trees and shrubs shall have planting pits dug twice the diameter of the root ball. Backfill around the root ball with prepared backfill mix.

4. Protect all areas from excessive compaction when trucking plants or other materials to planting site.

5. Install Root Barrier at all locations where tree is within 5'-0" of concrete or other hardscape.

6. Can Removal

    a. Cut cans on two (2) sides with an acceptable can cutter.

    b. Do not injure the root ball.

    c. Do not cut cans with spade or ax.

    d. Carefully remove plants without injury or damage to root ball.

    e. After removing plant, manually scarify root ball to loosen perimeter roots.

7. Box Removal

    a. Remove bottom of plant boxes before planting.

    b. Remove sides of box without damage to root ball after positioning plant and partially backfilling.

8. Center plant in pit.

9. Face plants with fullest growth into prevailing wind.

10. Set plant plumb and hold rigidly in position until soil has been tamped firmly around ball roots.

11. Remainder of planting pit shall be backfilled with:

    a. Amended soil per Soil Analysis and Drawing Detail.
    b. Grow Power-Plus per rate of manufacture's recommendations.
    c. Specified type and quantity of planting tablets

12. All plants which settle shall be raised to the correct level. After the plant has been placed, additional backfill shall be added to the hole to cover approximately one-half (1/2) of the height of the root ball. Water shall be added to the top of the partly filled hole to thoroughly saturate the root ball and adjacent soil.

13. After the water has completely drained, planting tablets shall be placed adjacent to but not in contact with root ball:

    One (1) tablet per 1-gallon container
    Two (2) tablets per 5-gallon container

Three (3) tablets per 15-gallon container
Four (4) tablets per 24" box
Five (5) tablets per 30" box
Six (6) tablets per 36" box
Seven (7) tablets per 42" box
Eight (8) tablets per 48" box and larger box sizes

14. The remainder of the hole shall be backfilled.

15. After backfilling an earthen basin shall be constructed around each plant. Each basin shall be of a depth sufficient to hold at least two (2) inches of water. Basin shall be of a size suitable for the individual plant. In no case shall the basin for fifteen (15) gallon plant be less than four (4) feet in diameter; a five (5) gallon plant less than three (3) feet in diameter. The basins shall be constructed of amended backfill materials and shall not be constructed for trees in turf areas. Edge of planter to be 2-1/2" below finish grade to allow for bark and prevent spilling onto sidewalk and existing parking lot.

16. Pruning: Pruning shall be limited to the minimum necessary to remove injured twigs and branches and to compensate for loss of roots during transplanting, but never to exceed one-third (1/3) of the branching structure. Upon approval of the Owner, pruning may be done before delivery of plant, but not before plants have been observed and approved. Cuts over three-quarter (3/4) inch in diameter shall be painted with tree wound paint.

17. Staking and Guying

    a. Staking of all trees shall conform to tree staking and tree guying details.

    b. Flagging: All guys are to be flagged 90% of the wire length and shall be covered with black polyethylene one-half (1/2) inch diameter tube.

    c. One (1) tree of each size shall be staked and approved by the Owner prior to continued staking.

D. Planting of Ground Cover

1. Ground cover shall be planted in straight rows and evenly spaced, unless otherwise noted, and at intervals called out in the Drawings. Triangular spacing shall be used unless otherwise noted on the Drawing.

2. Each rooted plant shall be planted with its proportionate amount of flat soil or in a peat pot in a manner that will insure minimum disturbance of the root system, but in no case shall this depth be less than two (2) nodes. To avoid drying out, planting shall be immediately irrigated after planting until the entire area is soaked to the full depth of each hole, unless otherwise noted on the Drawing.

3. Care shall be exercised at all times to protect the plants after planting. Any damage to plants by trampling or other operations of this Contract shall be repaired immediately.

E. Sod Planting

1. Soil Preparation: As per paragraph 3.03 A.

2. Grading and Rolling: Carefully smooth all surfaces to be sodded. Roll area to expose soil depressions or surface irregularities. Regrade as required.

3. Fertilizing: Spread turf fertilizer (16-6-8) onto the soil evenly at the rate of four (4) pounds per 1,000 square feet of lawn area.

4. Laying sod: Lay first strip of sod along a straight line (use a string in irregular areas). Butt joints tightly, but do not overlap edges. On second strip, stagger joints. Use a sharp knife to cut sod to fit curves, edges and irrigation heads.

5. Watering: Do not lay whole lawn before watering. When a conveniently large area has been sodded, water lightly to prevent drying. Continue to lay sod and to water until installation is complete.

6. Rolling sod: After laying all sod, roll lightly to eliminate irregularities and to form good contact between sod and soil. Avoid a very heavy roller or excessive initial watering which may cause roller marks.

7. Irrigation: Water thoroughly the completed lawn surface. Soil should be moistened at least eight (8) inches deep. Repeat irrigation at regular intervals to keep sod moist at all times until rooted. After sod is established, decrease frequency and increase amount of water per application as necessary.

8. Replacement: Replace all dead or dying sod with equal material as directed by the Owner.

H. Weed Control

1. Apply weed control to all non-turf areas after completion of all planting and one (1) complete watering (to "set" plants).

2. Apply as per manufacturer's specifications.

I. Fungicide

1. Apply fungicide to all turf following installation

2. Apply as per manufacturer’s specifications.

3. After initial application apply at two-week intervals as required to prevent fungus until end of Contract period.

J. Hardpan Conditions

1. Where hardpan exists, whether it is in the form of caliche or other impervious clay, and it is within the top two-and-one-half feet (2-1/2') of soil, use powered equipment to break through completely at each plant location to allow drainage and root growth. Remove hardpan at least one-and-one-half feet (1-1/2') greater than the rootball diameter of plant. Backfill with soil mix as specified.

2. Where hard pan is within the first twelve (12) inches of soil, it shall be completely penetrated for all trees and shrubs.

3.05 OBSERVATION SCHEDULE

A. The Contractor shall be responsible for notifying the Owner in advance for the following observations according to the time indicated:

1. Pre-construction conference - 7 days.

2. Rough grade review - 48 hours.

3. Controller and backflow preventer installation review - 48 hours.

4. Irrigation pressure line and lateral line installation and testing - 48 hours.

5. Irrigation sprinkler coverage test - 48 hours.

6. Finish grade review - 48 hours.

7. Plant material review - 48 hours.

8. Plant layout review - 48 hours.

9. Soil preparation, plant layout, and planting operations. One (1) tree with each type of specified shall be approved prior to planting of trees - 48 hours.

10. End of landscape installation - 48 hours.

11. Final Acceptance - 48 hours

B. No site visits shall commence without all items noted in previous Observation Reports either completed or remedied, unless such compliance has been waived. Failure to accomplish punch list tasks or prepare adequately for desired observations shall make the Contractor responsible for reimbursing the Owner at his current billing rates per hour, plus transportation costs.

3.06 CLEAN UP

After all planting operations have been completed; remove all trash, excess soil, empty plant containers or rubbish from the property. All scars, ruts or other marks in the ground caused by this work shall be repaired and the ground left in a neat and orderly condition throughout the site. The Contractor shall pick-up all trash resulting from this work no less frequently than each Friday before leaving the site, once a week, and/or the last working day of each week. All trash shall be removed completely from the site. The Contractor shall leave the site area broom-clean and shall wash down all paved areas within the Contract area, leaving the premises in a clean condition acceptable to the Owner.

END OF SECTION

SECTION 030000

CONCRETE

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Contractor shall furnish all labor, tools, and equipment for the construction of reinforced cast-in-place concrete.

B. This section includes basic finishing and curing methods, accessory control, and expansion and contraction joint devices.

1.2 RELATED WORK

A. The following is a list of specifications which may be related to this section:

1. Section 31000, Concrete Forming and Accessories (ACI 347)

2. Section 02764, Pavement Joint Sealants.

3. Section 312000, Earthwork.

4. Section 328400, Planting Irrigation.

1.3 REFERENCES

A. The following is a list of standards which may be referenced in this section:

1. ASTM International (ASTM):
   a. C33, Standard Specification for Concrete Aggregates.
   b. C94/C94M, Standard Specification for Ready-Mixed Concrete.
   c. C150, Standard Specification for Portland cement.
   d. C260, Standard Specification for Air-entraining Admixtures for Concrete.
   e. C494/C494M, Standard Specification for Chemical Admixtures for Concrete.
   f. C979, Standard Specification for Pigments for Integrally Colored Concrete.
   g. C1059, Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete.

2. American Concrete Institute (ACI):
   a. 211, Standard Practice for Selecting Proportions for Concrete.
   b. 301, Specifications for Structural Concrete.

c. 305.1, Specification for Hot Weather Concreting.
d. 306.1, Specification for Cold Weather Concreting.
e. 309, Standard Practice for Consolidating Concrete.
f. 504, Guide to Joint Sealants.

1.4 SUBMITTALS

A. Provide product data on the following:

1. Ready-mixed concrete mix designs.

2. Fly ash.

3. Admixtures (such as air-entraining and water-reducing admixtures).

4. Form release agents.

5. Bonding agents.

6. Colorant.

7. Grout.

B. Shop Drawings: Provide shop drawings that indicate formwork, dimensions, reinforcement, accessories and control and expansion joint layout.

C. Record Drawings: Provide accurate locations, measured from two permanent visible locations, all embedded utilities, sleeves, and components that will be concealed from view upon completion of concrete work.

1.5 COORDINATION

A. Coordinate with other trades affecting or affected by work of this section.

B. Verify that pipe sleeving and other conduits, of sizes and types specified, are installed as required prior to placing concrete.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

B. Installer Qualifications: A qualified installer who employs project personnel qualified as ACI-certified Flatwork Technician and Finisher and/or a supervisor who is an ACI-certified Concrete Flatwork Technician.

C. Testing Agency Qualifications: An independent agency qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

D. Personnel conducting field tests shall be qualified as ACI Concrete Field-Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

E. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician, Grade II.

1.7 MOCK UP

A. Cast concrete mock up to demonstrate typical joints, surface finish, texture, tolerances, and standard of workmanship.

B. Mock up shall be a minimum 25 sq. ft. for formed surface in the location indicated or, if not indicated, as directed by Owner's Representative.

C. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion. Demolish and remove concrete mockups when directed by Owner's Representative.

1.8 DELIVERY, STORAGE, AND HANDLING

A. The ready-mixed concrete truck driver shall provide the batch ticket to Owner's Representative at the time of concrete delivery. The ticket shall summarize the following information legibly in an easily discernible table:

1. Weight in pounds of all materials, excepting the water reducing and air entraining agents which shall be in ounces.

2. Cubic yards batched.

3. The ratio of water to cementitious (W/C) materials ratio.

4. Temperature of the concrete at the time it was batched.

5. Time of batching.

6. Free moisture in the fine and coarse aggregates in percent of weight of aggregate.

7. Gallons of water that may be added at the site without exceeding the permissible W/C ratio.

8. Ratio of colorants to cementitious materials ratio.

9. Concrete Mix Design Number.

1.9 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.

2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

B. Hot-Weather Placement: Comply with ACI 301 and as follows:

1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

B. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

C. Installation of concrete other than approved mixes shall be replaced at the expense of the Contractor.

2.2 MATERIALS

A. Acquire cement and aggregate from the same source for all work.

B. Cement: Cement shall be Portland cement Type II, unless otherwise indicated on the Drawings.

C. Aggregate:

1. Fine Aggregate: Fine aggregate shall consist of hard, strong, durable particles complying with the provisions of ASTM C33.

2. Coarse Aggregate: Coarse aggregate shall conform to the provisions of ASTM C33. Aggregate shall be crushed aggregate or angular screened natural aggregate. Hydraulic - cement aggregate is unacceptable.

D. Water: Water shall be clean and free from injurious amounts of oils, acids, alkalis, salts, organic materials, or other substances that may be deleterious to concrete or steel. Mixing water for prestressed, pretensioned and prestressed post-tensioned concrete or for concrete which will contain aluminum embedments shall not contain deleterious amounts of chloride ion.

E. Admixtures: Admixtures to be used in concrete shall be subject to prior acceptance by Owner's Representative. The admixture shall maintain the same composition and performance throughout the Work as the product used in the concrete proportions established in accordance with ACI 211. Admixtures containing chloride ions shall not be used.

1. Air Entrainment:

a. An air-entraining agent shall be used in all concrete. The agent used shall conform to ASTM C260.
b. Unless otherwise shown on the Drawings, the amount of airentraining agent used in each concrete mix shall be such as will affect the entrainment of the percentage of air shown in the following tabulation in the concrete as discharged from the mixer or pumper discharge hose if applicable. Table 1 is applicable for concrete strengths less than five thousand (5,000) psi

Table 1

Nominal Max. Aggregate Size (Inch)	Average Air Content (Percent)	
	Severe Exposure	Moderate Exposure
3/8	7-1/2 ± 1-1/2	6 ± 1-1/2
3/4	6 ± 1-1/2	5 ± 1-1/2
1-1/2	5-1/2 ± 1=1/2	4-1/2 ± 1-1/2

c. The level of exposure shall be determined by Owner's Representative.
d. When a batch of concrete delivered to the Project does not conform to the minimum specified air content, an air-entraining admixture may be added, one (1) time only for the batch, at Contractor's option prior to consideration for rejection. After the admixture is added, the concrete shall be remixed for a minimum of twenty (20) revolutions of the mixer drum at mixing speed. The concrete shall then be retested and if found acceptable, may be placed in accordance with the Specifications.

2. Water Reducing, Set-Controlling Admixture: Contractor shall use a "midrange" water reducing, set controlling admixture, Polyheed 997, or equal. The water-reducing admixture shall be used in all concrete and shall conform to ASTM C494/C494M, specifically Types A, B, C, D, and E.

3. Finely Divided Mineral Admixtures (Fly Ash): Mineral admixtures shall be limited to fly ash conforming to ASTM C618, Class C or Class F. Class C fly ash is not permitted where sulfate resistant cement is required.

F. Bituminous Coating: Bituminous Coating for aluminum pipes will be in accordance with AASHTO M-190 Type A.

G. Epoxy Bonding Agent:

1. Master Builders; Concresive Liquid (LPL).

2. Master Builders; Concresive Standard Liquid.

2.3 COMPRESSIVE STRENGTH

A. Concrete compressive strength requirements consist of a minimum strength that must be obtained before various loads of stresses are applied to the concrete and, for concrete designated by strength, a minimum strength at the age of twenty-eight (28) days. Unless otherwise shown on the DRAWINGS, the twenty-eight (28) day compressive strength of structural concrete shall be a minimum of four thousand five hundred (4,500) psi.

B. The mix shall be designed for required strengths in accordance with ACI 301. The ratio of water to the sum of concrete plus pozzolan shall not exceed 0.45 by weight for durable, watertight, concrete. The amount of fly ash in the mix shall be between fifteen and twenty percent (15 and 20%) by weight of the total cementitious materials.

C. Unless otherwise permitted or specified in the DRAWINGS, the concrete shall be proportioned and produced to have a slump not to exceed four (4) inches or less than two and one-half (2-1/2) inches. Concrete not consolidated by internal vibration shall be proportioned to have a slump not to exceed five and one-half (5-1/2) inches or less than four (4) inches.

2.4 SOURCE QUALITY CONTROL

A. Batching:

1. Measuring and batching of materials shall be done at a batching plant.

2. Portland Cement:

   a. Either sacked or bulk cement may be used. No fraction of a sack of cement shall be used in a batch of concrete unless the cement is weighed. Bulk cement shall be weighed on scales separate and distinct from the aggregate hopper or hoppers. Batching shall be such that the accuracy of batching shall be plus or minus one percent of the required weight.

3. Water:

   a. Unless water is to be weighed, the water-measuring equipment shall include an auxiliary tank from which the measuring tank shall be filled. In lieu of the volume method, Contractor shall be permitted to use a water-metering device.

4. Aggregates:

   a. Aggregates shall be handled from stockpiles or other sources to the batching plant in such a manner as to secure a uniform grading of the material. Aggregates that have become segregated, or mixed with earth or foreign material, shall not be used. Batching shall be so conducted as to result in the weights of material required for each type aggregate within a tolerance of two percent (2%).
   b. Free water contents of the coarse and fine aggregates shall be continuously tested and concrete mixture adjusted for moisture conditions of the aggregate in order to meet the designated water/cement ratio.

5. Fine Aggregate:

   a. The proportion of fine aggregate shall be between thirty-six and forty-four percent (36 and 44%) by volume of the total aggregates in the concrete.

B. Mixing:

1. Ready-mixed concrete shall be either “central mixed” or “shrink mixed” concrete as defined in ASTM C94/C94M. “Truck mixed” concrete as defined in ASTM C94/C94M shall not be permitted. Mixing time shall be measured from the time water is added to the mix, or cement contacts the aggregate. All concrete shall be homogeneous and thoroughly mixed, and there shall be no lumps or evidence of undispersed cement. Mixers and agitators, which have an accumulation of hard concrete or mortar, shall not be used. Ready-mixed concrete shall be mixed and transported in accordance with ASTM C94/C94M.

2. The temperature of mixed concrete, immediately before placing shall not be less than fifty degrees Fahrenheit (50°F) or more than ninety degrees Fahrenheit (90°F). Aggregates and water shall be heated or cooled as necessary to produce concrete within these temperature limits. Neither aggregates nor mixing water shall be heated to exceed one hundred fifty degrees Fahrenheit (150°F).

3. The time elapsing from the time water is added to the mix (or the cement comes in contact with aggregate) until the concrete is deposited in place at the site of the WORK shall not exceed sixty (60) minutes when the concrete is hauled in non-agitating trucks, nor more than ninety (90) minutes when hauled in truck mixers or truck agitators.

4. The batch shall be so charged into the drum that a portion of the mixing water shall enter in advance of the cement and aggregates. The flow of water shall be uniform and all water shall be in the drum by the end of the first one-quarter (1/4) of the specified mixing time.

5. Cement shall be charged into the mixer by means that will not result in loss of cement because of the effect of wind, or in accumulation of cement on surfaces of hoppers or in other conditions which reduce or vary the required quantity of cement in the concrete mixture.

C. Transporting Mixed Concrete; Mixed Concrete or Truck Mixers:

1. Transporting of mixed concrete shall conform to ASTM C94/C94M.

2. Truck agitators shall be loaded not to exceed the manufacturer’s guaranteed capacity. They shall maintain the mixed concrete in a thoroughly mixed and uniform mass during hauling.

3. No additional mixing water shall be incorporated into the concrete during hauling or after arrival at the delivery point, unless approved by Owner’s Representative. If additional water is to be incorporated into the concrete at the site, the drum shall be revolved not less than thirty (30) revolutions at mixing speed after the water is added and before discharge is commenced. One (1) addition of water at the site to adjust mix workability is permitted but the maximum water cement ratio shall not be exceeded.

4. Contractor shall furnish a water-measuring device in good working condition, mounted on each transit mix truck, for measuring the water added to the mix on the site. All water tanks on transit mix trucks shall be filled prior to being batched and arrive at the construction site one hundred percent (100%) full.

5. Each load of ready mixed concrete delivered at the job shall be accompanied by the ticket in accordance with Article Delivery, Storage, and Handling.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prior to placing concrete, Contractor shall remove all debris and thoroughly dampen the surfaces that may be in contact with the concrete to be placed.

B. Contractor shall use compressed air from an air compressor to blow out construction debris and dirt at the bottom of members to be placed such as walls, beams, and columns, prior to final placement of forms that may obscure any joint. Contractor shall demonstrate to Owner's Representative that all debris, such as concrete particles, saw dust, loose tie wire, bar tags, tape, trash and dirt, have been thoroughly removed.

C. All surfaces of forms and embedded materials that have become encrusted with dried mortar or grout from concrete previously placed shall be cleaned of all such mortar or grout before the surrounding or adjacent concrete is placed.

D. No concrete shall be placed until all formwork, reinforcement, installation of parts to be embedded, bracing of forms, and preparation of surfaces involved in the placing have been reviewed by Owner's Representative.

E. Immediately before placing concrete, all surfaces upon or against which the concrete is to be placed shall be free from standing water, mud, debris, or loose materials.

F. No concrete shall be placed when form surfaces that may be in contact with the concrete, reinforcement, embedded items or sub-base is less than thirty-two degrees Fahrenheit (32°F). When the mean daily outdoor temperature is less than forty degrees Fahrenheit (40°F), the temperature of the concrete shall be maintained between fifty degrees Fahrenheit (50°F) and seventy degrees Fahrenheit (70°F) for the required curing period. When necessary, arrangements for heating, covering, insulating, or housing the concrete work shall be made in advance of placement and shall be adequate to maintain the required temperature without injury as a result of concentration of heat. Combustion heaters shall not be used during the first twenty-four (24) hours unless precautions are taken to prevent exposure of the concrete to exhaust gases which contain carbon dioxide.

G. Concrete shall not be placed against forms exposed to heating unless the temperature of the forms is first cooled to less than or equal to ninety degrees Fahrenheit (≤90°F).

3.2 PLACEMENT

A. Placement shall conform to ACI 301, Chapter 8, ACI 304, ACI 306.1, ACI 305.1, and ACI 309. No concrete shall be placed in water except with the written permission of Owner's Representative. The surfaces of absorptive materials against or upon which concrete is to be placed shall be moistened thoroughly so that moisture will not be drawn from the freshly placed concrete. The concrete shall be placed by equipment that

will prevent segregation or loss of ingredients. The stream of concrete shall not be allowed to separate by permitting it to fall freely over rods, spacers or other embedded materials.

B. Unless otherwise called out in these Specifications or shown on the Drawings, the placement lift depth of concrete in walls shall be limited to two (2) feet or less to minimize surface defects such as air voids that can form on concrete surfaces. Lift depths shall be limited to one (1) foot if, in the opinion of Owner's Representative, the quality of the finish is unacceptable at the two- (2-) foot lift depth.

C. Concrete shall be placed so as to avoid segregation of the materials and the displacement of the reinforcement.

D. Concrete shall not be dropped more than five (5) feet unless confined by closed chutes or pipes. Care shall be taken to fill each part of the form by depositing the concrete as near final position as possible. The coarse aggregate shall be worked back from the forms and worked around the reinforcement without displacing the bars. After initial set of the concrete, the forms shall not be jarred and strain shall not be placed on the ends of projecting reinforcement.

E. Where steep slopes are required, the chutes shall be equipped with baffle boards or be in short lengths that reverse the direction of movement.

F. Concrete shall not be pumped through aluminum alloy pipe.

G. All chutes, troughs, and pipes shall be kept clean and free from coatings of hardened concrete.

3.3 CONSOLIDATION

A. Concrete vibrators for consolidating concrete shall be two and one-half inch (2-1/2") diameter "high cycle" vibrators with a frequency under load of eight thousand (8,000) to ten thousand four hundred (10,400) vibrations per minute (vpm). Concrete vibrators of lesser capacity are unacceptable for use in any part of the construction. Contractor shall have at least one standby concrete vibrator ready for use for every two (2) concrete vibrators in use during a concrete placement.

B. All concrete shall be thoroughly consolidated with internal vibrators as recommended in ACI 309 immediately after deposition. The concrete shall be thoroughly worked around the reinforcing steel, around embedded items and into corners of forms. Vibration shall be supplemented by spading, rodding, or forking to eliminate all honeycomb and voids around embedded items.

C. The vibrator shall be inserted vertically, allowing it to penetrate rapidly to the bottom of the lift and at least six (6) inches into the previous lift. The vibrator shall be held at the bottom of lift for five to fifteen (5 - 15) seconds. The vibrator shall be pulled up at a rate of about three (3) inches per second.

D. The vibrator shall be inserted so that the fields of action overlap. The field of action is approximately eight (8) times the vibrator's head diameter. Thus for a two and one-half (2-1/2) inch diameter vibrator, the spacing of each insertion shall be approximately twenty (20) inches.

E. Vibration shall be stopped when the concrete surface takes a sheen and large air bubbles no longer escape.

F. Do not use a vibrator to move concrete horizontally.

3.4 OPENINGS AND INSERTS

A. Pipe sleeves, inserts for pipe connections, anchors, and forms for pipe holes shall be accurately placed and securely fastened to the forms in such a manner that the placing of concrete shall not alter their alignment or location. In the event that openings are inadvertently omitted or improperly placed, Owner's Representative may require the concrete to be cored at the proper location. Filling of improperly placed openings shall be done with expansive grout or dry pack or mortar applied with an accepted epoxy adhesive. The surfaces of the opening shall be roughened prior to filling.

3.5 EMBEDDED ITEMS

A. At the time of concrete placement, embedded items shall be clean and free from mud, oil, and other coatings that may adversely affect bonding capacity. Aluminum embedments shall be coated with a bituminous material to prevent electrolytic action between the embedded item and reinforcing steel that results in concrete deterioration. Embedment items shall be accurately placed and securely fastened to the forms in such a manner that the placing of concrete shall not alter their alignment or location. Contact between embedded items and reinforcing steel or tendon ducts is unacceptable and is not permitted.

3.6 CONSTRUCTION JOINTS

A. The location of all construction joints shall be subject to the acceptance of Owner's Representative. The surface of all construction joints shall be thoroughly cleaned and all laitance and standing water removed. Clean aggregate shall be exposed by abrasive blast cleaning. Wire brushing and air water jets may be used while concrete is fresh provided results are equal to abrasive blast cleaning. Construction joints shall be keyed at right angle to the direction of shear. Except where otherwise shown on the Drawings, keyways shall be at least one and one-half (1-1/2) inch in depth over at least twenty five percent (25%) of the area of the section.

3.7 EVAPORATIVE RETARDANT

A. The use of an evaporative retardant is required to assist in proper placement of concrete. Apply two (2) times; after screeding and after the first floating operation. The retardant should be applied at a rate of one (1) gallon of sprayable solution per two hundred to four hundred (200 - 400) square feet by spraying with an industrial type sprayer. If the nozzle of the sprayer becomes plugged, Contractor shall clean, or replace, the nozzle. Under no circumstances shall the retardant be used except by spraying a mist with a nozzle. The retardant shall be applied in strict conformance with the manufacturer's recommendations and precautions. In no case shall the retardant be used as a finishing agent. The use of an evaporative retardant requires review and approval by Owner's Representative.

3.8 FIELD QUALITY CONTROL

A. Contractor shall assist Owner or the concrete testing consultant as requested during the performance of quality control testing. When concrete is placed using a concrete pumper, concrete for testing will be taken from the pumper discharge hose.

END OF SECTION 03 00 00

SECTION 031000

CONCRETE FORMING AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Formwork for cast-in-place concrete.
2. Shoring, bracing, and anchorage.
3. Wood form materials.
4. Prefabricated forms.
5. Formwork accessories.
6. Form stripping.

B. Related Requirements:
1. Section 033000 - Cast-in-Place Concrete: Cast-in-place or in-situ concrete for structural building frame, slabs-on-grade, and other concrete components associated with building.

1.2 MEASUREMENT AND PAYMENT

A. Refer to Measurement and Payment section.

1.3 REFERENCE STANDARDS

A. American Concrete Institute:

1. ACI 117 - Specification for Tolerances for Concrete Construction and Materials.
2. ACI 301 - Specifications for Structural Concrete.
3. ACI 318 - Building Code Requirements for Structural Concrete.
4. ACI 347 - Guide to Formwork for Concrete.

B. American Forest & Paper Association:

1. AF&PA - National Design Specification (NDS) for Wood Construction.

C. American Society of Mechanical Engineers:

1. ASME A17.1 - Safety Code for Elevators and Escalators.

D. APA - The Engineered Wood Association:

1. APA/EWA PS 1 - Voluntary Product Standard - Structural Plywood.

E. ASTM International:

1. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
2. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.

F. West Coast Lumber Inspection Bureau:

1. WCLIB - Standard No. 17 Grading Rules for West Coast Lumber.

1.4 COORDINATION

A. Coordinate Work of this Section with other Sections of Work in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other Work.

1.5 QUALITY ASSURANCE

A. Perform Work according to ACI 347.

B. For wood products furnished for Work of this Section, comply with AF&PA.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store materials off ground in ventilated and protected manner to prevent deterioration from moisture.

PART 2 - PRODUCTS

2.1 WOOD FORM MATERIALS

A. Softwood Plywood: Comply with APA/EWA PS 1, exterior BB (Concrete form) Class 1 plywood.

B. Plywood Forms:

1. Application: Exposed finish concrete.
2. Description:

a. Comply with APA/EWA PS 1.
b. Panels: Full size, 4 by 8 feet.
c. Label each panel with grade trademark of APA/EWA.

3. Plywood with "Smooth Finish" Indicated on Drawings:

    a. Minimum Thickness: 3/4 inch.
    b. Grade: APA/EWA "HD Overlay Plyform Structural I Exterior."

2.2 PREFABRICATED FORMS

A. Tubular Column:

1. Description: Round spirally wound laminated fiber.
2. Surface Treatment: Release agent, non-reusable.
3. Sizes: As indicated on Drawings.
4. Manufacturers:

    a. Sonotube.
    b. Or equal.

2.3 FORMWORK ACCESSORIES

A. Form Release Agent:

1. Description: Colorless mineral oil that will not stain concrete or absorb moisture.

B. Corners:

1. Type: Fillet or chamfer.
2. Lengths: Maximum possible.

C. Preformed Joint Filler Bituminous Joint Filler: Comply with ASTM D1751.

D. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Size, strength, and character to maintain formwork in place while placing concrete.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify lines, levels, and centers before proceeding with formwork.

B. Verify that dimensions agree with Drawings.

C. If formwork is placed after reinforcement resulting in insufficient concrete cover over reinforcement, request instructions from Engineer before proceeding.

3.2 INSTALLATION

A. Formwork:

1. Provide top form for sloped surfaces steeper than 1.5 horizontal to 1 vertical to hold shape of concrete during placement, unless it can be demonstrated that top forms can be omitted.
2. Construct forms to correct shape and dimensions, mortar-tight, braced, and of sufficient strength to maintain shape and position under imposed loads from construction operations.
3. Camber forms where necessary to produce level finished soffits unless indicated otherwise on Drawings.
4. Positioning:

    a. Carefully verify horizontal and vertical positions of forms.
    b. Correct misaligned or misplaced forms before placing concrete.

5. Complete wedging and bracing before placing concrete.
6. Erect formwork, shoring, and bracing to achieve design requirements according to ACI 301.
7. Stripping:

    a. Arrange and assemble formwork to permit dismantling and stripping.
    b. Do not damage concrete during stripping.
    c. Permit removal of remaining principal shores.

8. Obtain approval of Engineer before framing openings in structural members not indicated on Drawings.
9. Do not patch formwork.
10. Leave forms in place for minimum number of days according to ACI 347.

B. Comply with manufacturer's installation instructions, performing each step in sequence. Maintain one set of manufacturer's installation instructions at Project Site during installation and until completion of construction.

C. Form Removal:

1. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads, and removal has been approved by Engineer.
2. Loosen forms carefully; do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.
3. Store removed forms in manner that surfaces to be in contact with fresh concrete will not be damaged.
4. Discard damaged forms.
5. Form Release Agent:

    a. Apply according to manufacturer instructions.

b. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.
c. Do not apply form release agent if concrete surfaces are indicated to receive special finishes or applied coverings that may be affected by agent.
d. Soak inside surfaces of untreated forms with clean water, and keep surfaces coated prior to placement of concrete.

6. Form Cleaning:

a. Clean forms as erection proceeds to remove foreign matter within forms.
b. Clean formed cavities of debris prior to placing concrete.
c. Flush with water or use compressed air to remove remaining foreign matter.
d. Ensure that water and debris drain to exterior through cleanout ports.
e. Cold Weather:

1) During cold weather, remove ice and snow from within forms.
2) Do not use de-icing salts.
3) Do not use water to clean out forms, unless formwork and concrete construction proceed within heated enclosure; use compressed air or other dry method to remove foreign matter.

7. Reuse and Coating of Forms:

a. Thoroughly clean forms and reapply form coating before each reuse.
b. For exposed Work, do not reuse forms with damaged faces or edges.
c. Apply form coating to forms according to manufacturer instructions.
d. Do not coat forms for concrete indicated to receive "scored finish."
e. Apply form coatings before placing reinforcing steel.

D. Forms for Smooth Finish Concrete:

1. Use steel, plywood, or lined-board forms.
2. Use clean and smooth plywood and form liners, uniform in size, and free from surface and edge damage capable of affecting resulting concrete finish.
3. Install form lining with close-fitting square joints between separate sheets without springing into place.
4. Use full-sized sheets of form liners and plywood wherever possible.
5. Tape joints to prevent protrusions in concrete.
6. Apply forming and strip wood forms in a manner to protect corners and edges.
7. Level and continue horizontal joints.
8. Keep wood forms wet until stripped.

E. Inserts, Embedded Parts, and Openings:

1. Install formed openings for items to be embedded in or passing through concrete Work.
2. Locate and set in place items required to be cast directly into concrete.

3. Install accessories straight, level, and plumb, and ensure that items are not disturbed during concrete placement.
4. Openings:

    a. Provide temporary ports or openings in formwork as required to facilitate cleaning and inspection.
    b. Locate openings at bottom of forms to allow flushing water to drain.

5. Close temporary openings with tight-fitting panels, flush with inside face of forms, and neatly fitted such that joints will not be apparent in exposed concrete surfaces.

F. Form Ties:

1. Provide sufficient strength and quantity to prevent spreading of forms.
2. Place ties at least 1 inch away from finished surface of concrete.
3. Leave inner rods in concrete when forms are stripped.
4. Space form ties equidistant, symmetrical, and aligned vertically and horizontally unless indicated otherwise on Drawings.

G. Arrange formwork to allow proper erection sequence and to permit form removal without damage to concrete.

H. Construction Joints:

1. Install surfaced pouring strip where construction joints intersect on exposed surfaces to provide straight line at joints.
2. Just prior to subsequent concrete placement, remove strip and tighten forms to conceal shrinkage.
3. Appearance:

    a. Show no overlapping of construction joints.
    b. Construct joints to present same appearance as butted plywood joints.

4. Arrange joints in continuous line straight, true, and sharp.

I. Embedded Items:

1. Make provisions for pipes, sleeves, anchors, inserts, reglets, anchor slots, nailers, water stops, and other features.
2. Do not embed wood or uncoated aluminum in concrete.
3. Obtain installation and setting information for embedded items furnished under other Sections.
4. Securely anchor embedded items in correct location and alignment prior to placing concrete.
5. Ensure that conduits and pipes, including those made of coated aluminum, meet requirements of ACI 318 regarding size and location limitations.

J. Openings for Items Passing through Concrete:

1. Frame openings in concrete where indicated on Drawings.

2. Establish exact locations, sizes, and other conditions required for openings and attachment of Work specified under other Sections.
3. Coordinate Work to avoid cutting and patching of concrete after placement.
4. Perform cutting and repairing of concrete required as result of failure to provide required openings.

K. Screeds:

1. Set screeds and establish levels for tops of and finish on concrete slabs.
2. Slope slabs to drain where required or as indicated on Drawings.
3. Before depositing concrete, remove debris from space to be occupied by concrete and thoroughly wet forms; remove freestanding water.

L. Screed Supports:

1. For concrete over waterproof membranes and vapor retarder membranes, use cradle-, pad-, or base-type screed supports that will not puncture membrane.
2. Staking through membrane is not permitted.

3.3 TOLERANCES

A. Comply with manufacturers' recommended tolerances and tolerance requirements in reference standards. When such tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.

B. Construct formwork to maintain tolerances according to ACI 301.

3.4 FIELD QUALITY CONTROL

A. Inspection:

1. Inspect erected formwork, shoring, and bracing to ensure that Work complies with formwork design and that supports, fastenings, wedges, ties, and items are secure.
2. Notify Engineer after placement of reinforcing steel in forms but prior to placing concrete.
3. Schedule concrete placement to permit formwork inspection before placing concrete.

END OF SECTION

SECTION 10430

SIGNS AND SIGN POSTS

A. SCOPE

This section consists of furnishing and installing sign panels, sign posts, fastening hardware, back braces, straps and saddle brackets at the locations shown on the plans or as designated by the Owners Representative. All work shall conform to Section 56 of the State Standard Specifications unless otherwise stated within these specifications.

B. MATERIALS

SINGLE SHEET ALUMINUM SIGN shall be fabricated from sheet aluminum alloy 6061-T6 or 5052-H38 and shall not have a vertical splice in the sheet aluminum. Aluminum sheeting must be free of buckles, warps, dents, cockles, burrs and defects resulting from fabrication and installation. All single sheet aluminum signs shall conform to Section 82-2 "Signs and Panels" of the latest State Standard Specifications.

RETROREFLECTIVE SHEETING shall be Type IV microprismatic, or approved equal. Retroreflectivity of the sheeting for sign background and legend shall conform to the requirements in ASTM Designation D 4956. Retroreflective sheeting must have Class 1, 3, or 4 adhesive backing and shall be applied to sign panels as recommended by the retroreflective sheeting manufacturer without stretching, tearing, and damage. The orientation of the legend must comply with the retroreflective sheeting manufacturer's instructions. The retroreflective sheeting must be a single, contiguous sheet without splices except for the splices produced during the manufacturing process of the retroreflective sheeting. The adhesive backing shall be pressure sensitive and fungus resistant.

METAL SIGN POSTS shall be 2" diameter galvanized post. Galvanizing shall conform to the provisions in Section 75-1.02B of the State Standard Specifications. Sign posts shall be free of buckles, warps, dents, cockles, burrs and defects resulting from fabrication and installation.

SIGN PANEL FASTENING HARDWARE: Framing assemblies for multiple sign installations shall be fabricated of structural steel conforming to the requirements in ASTM A36/A36M, or of aluminum alloy as shown on the Plans. Frames fabricated of structural steel shall be hot-dip galvanized after fabrication.

Back braces for signs shall be commercial quality, mild steel, hot-dip galvanized after fabrication.

Straps and saddle brackets for mounting sign panels on electroliers, sign structure posts and traffic signal standards or where shown on the Plans shall be stainless steel conforming to the requirements in ASTM A 167, Type 302 or 304. Theft-proof bolts shall be stainless steel with a chromium content of at least 16 percent and a nickel content of at least 8 percent.

Lag screws, bolts (except theft-proof bolts), metal washers and nuts shall be commercial quality steel, hot-dip galvanized after fabrication. Fiber washers shall be of commercial quality.

Galvanizing shall conform to the provisions in Section 75-1.05 of the State Standard Specifications.

Components of bolted assemblies shall be galvanized separately before assembly.

C. WORKMANSHIP

POSTS: Excavate post holes to the depth shown. Place posts in the holes. Backfill material for posts must be Class B concrete as provided in Section TS 9, “Concrete Work”, of these Technical Specifications. Surplus excavated material shall be disposed of in a uniform manner within the project limits as directed by the Engineer. The line between the center of the top of a post and the center of a post at the ground line shall be plumb within a tolerance of not to exceed 0.02 foot in 10 feet.

SIGN PANELS: Sign information must be imprinted in 1/4-inch upper case letters and numerals. Locate this information on the back, lower right of each sign panel so that it will not be blocked by a sign post or mounting frame. Sign information must include:

1. Sign fabricator's name
2. Month and year of fabrication
3. Type of retroreflective sheeting
4. Sheeting manufacturer's identification and lot number for the retroreflective sheeting

Sign information must be imprinted at the fabrication plant by die-stamping on aluminum panels or by an equivalent method for aluminum signs, such as affixing a die-stamped aluminum tag. The information must not be painted, screened, inked, or engraved. The information must be imprinted in a way that does not damage the face of the sign.

Sign panels shall be installed by the Contractor in conformance with the details on the Plans or as directed by the Owners Representative. Any chipping or bending of sign panels shall be considered as sufficient cause to require replacement of panels at the Contractor’s expense.

All fastening hardware shall be furnished by the Contractor.

Signs shall be free from blemishes that may affect the serviceability and detract from the general sign color and appearance when viewing during daytime and nighttime from a distance of 25 feet. The face of each finished sign shall be uniform, flat, smooth, and free of defects, scratches, wrinkles, gel, hard spots, streaks, extrusion marks, and air bubbles. The front, back, and edges of the sign panels shall be free of router chatter marks, burns, sharp edges, loose rivets, delaminated skins, excessive adhesive over-spray and aluminum marks.

D. CERTIFICATES OF COMPLIANCE

The California Department of Transportation maintains a list of Prequalified and Tested Signing and Delineation Materials. The Engineer shall not be precluded from sampling and testing products on the list of Prequalified and Tested Signing and Delineation Materials.
The Contractor shall work with the manufacturer of products on the list of Prequalified and Tested Signing and Delineation Materials and furnish the Engineer a Certificate of Compliance in conformance with the provisions in Section 6- 1.07, "Certificates of Compliance," of the State

Standard Specifications for each type of traffic product supplied.

For those categories of materials included on the list of Prequalified and Tested Signing and Delineation Materials, only those products shown within the listing may be used in the work. Other categories of products, not included on the list of Prequalified and Tested Signing and Delineation Materials, may be used in the work provided they conform to the requirements of the State Standard Specifications.

E. MEASUREMENT

Measurement of Signs and Sign Posts will be made as a field count of each sign post with sign installed as a single unit per the drawings and these technical specifications.

END OF SECTION

SECTION 11 68 00

PLAYGROUND EQUIPMENT

PART 1 - GENERAL

1.0 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including Division 01 Specification Sections, apply to this Section.

1.1 SUMMARY

A. This Section includes the following:

B. Playground Equipment coordination and installation.

1. Playground Equipment will be Owner-provided and installed by Recreation Science except where noted.

2. Contractor is responsible for coordinating the work with all related trades and materials suppliers, including site elements, safety surfacing, and utilities.

3. Contractor will select and pay for Playground Safety Inspector prior to layout of play area and installation. Contractor is responsible for scheduling the reviews and inspections. Related Sections include the following:
    a. Section 321816.13 Playground Resilient Surfacing EPDM for protective surfacing under and around playground equipment.

1.2 DEFINITIONS

A. Fall Height: According to ASTM F 1487, "the vertical distance between a designated play surface and the protective surfacing beneath it."

B. HDPE: High-density polyethylene.

C. IPEMA: International Play Equipment Manufacturers Association.

D. LLDPE: Linear low-density polyethylene.

E. MDPE: Medium-density polyethylene.

F. Use Zone: According to ASTM F 1487, "the area beneath and immediately adjacent to a play structure that is designated for unrestricted circulation around the equipment and on whose surface it is predicted that a user would land when falling from or exiting the equipment."

1.3 PERFORMANCE REQUIREMENTS

A. Safety

1. Installation of playground equipment, including any specialty concrete, shall meet the safety requirements of the current CPSC and ASTM F 1487 and Title 22. Social Security; Division 4. Environmental Health; Chapter 22. Safety Regulations for Playgrounds.

1.4 SUBMITTALS

A. Provide submittals in accordance with Administrative Requirements and Section 321816.13 – Playground Resilient Surfacing EPDM. Contractor shall provide submittals in a timely manner to facilitate the ordering of equipment and to allow installation in accordance with the approved construction schedule.

B. Installer Qualifications

1. Installer Certificates: Signed by manufacturers certifying that installers comply with requirements.

2. Provide evidence the installer of the play equipment possesses liability insurance of at least $1,000,000 from a reputable insurance company covering defects in materials, workmanship, and installation. This liability shall cover any bodily harm resulting from a failure of play equipment due to installation defects.

3. Qualification Data:
   a. For Installer: Submit a listing of at least five installations where the brand of play equipment with similar units to those proposed has been installed and has been in successful service for at least five years. This list shall include owner or purchaser; address of installation; service or maintenance organization; date of installation; and contact person and phone number.
   b. For Manufacturer: Submit documentation that the Playground Equipment Manufacturer is ISO 9001 certified (Quality Management Standard) and ISO 14001 certified (Environmental Management Standard)

C. Product Data: For each type of product indicated submit two electronic copies of play equipment product data, catalog cuts, photo brochures, specifications, and installation procedures, (including diagrams, instructions, scale models) or other printed information in sufficient detail and scope to verify compliance with requirements of the contract documents

D. Provide a Certificate of Insurance from the manufacturer, covering both product and general liability, of not less than $1,000,000. The issuing underwriter shall be AA rated.

E. Product Certificates: For each type of playground equipment, signed by product manufacturer.

F. Material Samples for Final Color Selection: For each type of material incorporated within the selected play equipment configuration.

G. Manufacturer Compliance Letter: Play Equipment Manufacturer shall provide Contractor and Owner a letter stating that the equipment design and detailing meets all professional standards of care for playground equipment, including compliance with ASTM, USCPSC Guidelines for Public Playground Safety,

H. Material Certificates: For the following items, signed by manufacturers:

1. Shop finishes.

2. Recycled plastic.

I. Submit a statement by the material supplier or equipment manufacturer asserting that the supplied material or equipment meets and is installed according to the specified requirements.

J. Maintenance Data: For playground equipment and finishes to include in maintenance manuals.

1. Submit two electronic copies of procedures and instructions pertaining to frequency of preventive maintenance, inspection, adjustment, lubrication, and cleaning necessary to minimize corrective maintenance and repair for play equipment. A list of all parts and components for the system, by manufacturer's name, part number, and nomenclature, shall be attached.

2. Supply a maintenance kit with each custom play structure that shall include wrenches for tamper-proof hardware, one (1) can of graffiti remover, primer, and spray paint to match the color of the structure, sandpaper, and a comprehensive maintenance manual. The maintenance manual shall include a complete plan drawing of the structure, inspection procedures, inspection report forms, and installation instructions and parts list. The entire kit is to be sent directly to the Owner..

K. Field quality-control test reports.

L. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for playground equipment.

M. Warranty: Special warranty specified in this Spec section, See 1.7.
1. Provide manufacturer’s standard warranty against all defects in materials and workmanship for the installed play equipment.

N. Testing Agency Qualifications: Contractor shall provide an independent agent qualified according to ANSI Z34.1 for testing indicated.

1. Submit IPEMA certification showing compliance with all applicable portions of the current ASTM F-1487 Standard.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Contractor responsible for coordinating delivery and storage with Recreation Science
B. Equipment shall be delivered and stored in accordance with the manufacturer's recommendations.

C. Protect materials from adverse weather.

1.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace playground equipment components that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
a. Structural failures including chipping, breaking or bending.

b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Play Equipment Warranty Period:
   a. 3 YEAR LIMITED WARRANTY for all moving parts; swing seats and hangers; track ride trolleys and bumpers; spring assemblies for all rocking equipment and any other equipment not included above against failure due to corrosion, deterioration or workmanship.
   b. 10 YEAR LIMITED WARRANTY for all aluminum; posts, clamps, beam, and caps, against structural failure due to corrosion, deterioration or workmanship. This warranty does not include any cosmetic issues.
   c. 15 YEAR LIMITED WARRANTY for all plastic and steel components, against structural failure due to corrosion, deterioration or workmanship. This warranty does not include any cosmetic issues.
   d. 15 YEAR LIMITED WARRANTY for protective plastic coating against structural failure due to corrosion, deterioration or workmanship. This warranty does not include any cosmetic issues.

3. General Warranty:
   a. Manufactured playground equipment shall be guaranteed against defects in workmanship, materials, or installation for a minimum period of one year after Substantial Completion. Warranty shall include but not be limited to such defects as bubbling, delamination, peeling, loss of integrity, poor ultraviolet stability, lack of permeability, or general deterioration due to weather. All posts shall be guaranteed against deterioration for ten years. All rotationally molded components shall be guaranteed for five years.

1.7 SUBSTITUTIONS

A. Contractor shall coordinate and install the play equipment shown on the drawings and described in this section. Substitutions are not allowed.

PART 2 - PRODUCTS

2.1 PLAYGROUND EQUIPMENT AND STRUCTURES (Contractor Furnished, Contractor Installed)

A. Refer to plans

2.2 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

   1. Cast aluminum: ASTM B 179

B. Steel: Comply with the following:
   1. Steel Plates, Shapes, and Bars: ASTM A 36, hot-dip galvanized.

   2. Steel Pipe: ASTM A 53 or ASTM A 135, standard-weight, hot-dip galvanized.

   3. Steel Tubing: ASTM A 500 or ASTM A 513, cold formed, hot-dip galvanized.

C. Stainless-Steel Sheet: ASTM A 240 or ASTM A 666; Type 304.

D. Fittings: ASTM A 467, Class CS, 4/0 or 5/0, commercial-quality, hot-dip galvanized steel connectors and swing or ring hangars.

E. Castings and Hangers: Malleable iron, ASTM A 47, Grade 32510, hot-dip galvanized.

F. Hardware: Manufacturer's standard; commercial-quality; corrosion-resistant; hot-dip galvanized steel and iron, stainless steel, or aluminum; of a secure and vandal-resistant design.

G. Fasteners: Manufacturer's standard; corrosion-resistant; hot-dip galvanized or plated steel and iron, or stainless steel; permanently capped, and theft resistant.

H. Opaque Plastic: Color impregnated, UV stabilized, and mold resistant.

1. Polyethylene: Fabricated from 96 percent recycled, purified, fractional-melt plastic resin; rotationally molded HDPE, LLDPE, or MDPE with not less than 1/4-inch wall thickness.

I. Rotationally Molded Poly Parts: These parts shall be molded using prime compounded linear low-density polyethylene with a tensile strength of 2500 psi per ASTM D 638 and with color and UV stabilizing additives. Wall thickness varies by product from .187 inches (3/16 inch) to .312 inches (5/16 inch). Color shall be specified (four standard colors are available).

J. Permalene Parts: These parts shall be manufactured from .75 inches thick high-density polyethylene that has been specially formulated for optimum UV stability and color retention. Compression-molded products shall meet or exceed density of. 933 G/cc per ASTM D 1505, tensile strength of 2400 psi per ASTM D 638. Color shall be specified (standard solid colors are tan, red, blue, green, and yellow). Some permalene parts are available in two-color laminate product with (2) .070 inches thick exterior layers over a .610 inches interior core of contrasting color. Color shall be specified (eight standard two-color options are available).

K. Custom Components: These parts shall be manufactured in sizes and shapes as shown on the drawings and as required to complete the play equipment layout. Custom components shall meet or exceed ASTM standards as set forth in the General Requirements section. All custom components must be approved by the Owner’s Representative.

L. Stepped Play Surfaces: Provide stepped platforms where indicated on Drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, site surface and sub-grade drainage, and other conditions affecting performance.

1. Do not begin installation before final grading required for placing protective surfacing is completed, unless otherwise permitted by the Owner’s representative.

2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prior to start of excavation, Contractor shall lay out the entire outdoor play area and stake location of all elements, including playground equipment, use zones, pathways, planters,

and hard surfaces, based on actual playground equipment supplied to be installed. Use zones shall not overlap hard surfaces, and shall meet criteria of current releases of CPSC, ASTM F 1292 and ASTM F 1487. The Owner's representative reserves the right to adjust the equipment locations and other elements to meet field conditions and use zone safety requirements.

3.3 INSTALLATION, GENERAL

A. General: Comply with manufacturer's written installation instructions, unless more stringent requirements are indicated. Anchor playground equipment securely, positioned at locations and elevations indicated.

1. Maximum Equipment Height: Coordinate installed heights of equipment and components with finished elevations of protective surfacing. Set equipment so fall heights and elevation requirements for age group use and accessibility are within required limits. To meet the impact attenuation requirements of the playground safety surface in accordance with ASTM F1292 and Section 321816.13 PLAYGROUND RESLIENT SURFACES, the maximum accessible height of playground equipment shall be as specified by the manufacturer. Verify that playground equipment elevations comply with requirements for each type and component of equipment.

2. All components of the equipment shall be installed accurately to produce true plumb and level installation.

B. Post and Footing Installation

1. Excavation: Excavate holes for posts and footings as indicated in firm, undisturbed or compacted sub-grade soil.

2. Post Set on Sub-grade: Level bearing surfaces with drainage fill to required elevation.

3. Post Set with Concrete Footing: Comply with ACI 301 for measuring, batching, mixing, transporting, forming, and placing concrete.
   a. Set equipment posts in/on concrete footing. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at the correct angle, alignment, height, and spacing.
      1) Place concrete around posts and vibrate or tamp for consolidation. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.
   b. Embedded Items: Use setting drawings and manufacturer's written instructions to ensure correct installation of anchorages for equipment.
   c. Concrete Footings: Smooth top, and shape to shed water.

3.4 PLAY AREA LAYOUT REVISIONS

A. The play area equipment layout, as shown on the Drawings, is based on the use of specific equipment designed for specific aesthetic character, play value and activities. The use of other equipment suppliers with different configurations, if approved, will require the Contractor to provide a revised play equipment layout and obtain approval of both the equipment and the play area layout from the Owner's Representative. Contractor shall be responsible for all costs to revise the layout including review of the layout and documentation of the revised layout by Owner's consultant. The revised play equipment layout shall include appropriate safety use zone clearances for the equipment selected.

3.5 LEVEL OF SAFETY SURFACING

A. All play equipment located in areas of sand, wood fiber, or other surfacing shall be clearly marked to indicate the finished level of safety surfacing material to meet impact- attenuating requirements. All metal posts, springs or supports shall be as marked by the manufacturer. Those items not marked by the manufacturer shall be marked with a 3/4" circle painted with black epoxy paint.

3.6 QUALITY CONTROL, INSPECTION AND ACCEPTANCE

A. Arrange for playground equipment manufacturer's technical personnel to inspect playground and playground equipment and components during installation and at final completion and to certify compliance with the following:

1. ASTM F 1487.

2. CPSC No. 325.

B. Notify the Owner’s representative at least 48 hours in advance of date and time of final inspection.

C. Replace all defective or damaged play equipment prior to acceptance.

D. Prior to final inspection and acceptance, remove all rubbish and excess material for disposal as approved, and leave area in a neat, satisfactory condition.

E. CERTIFICATION INSPECTION

1. All play equipment shall be inspected by a Playground Safety Inspector with a valid certification from the National Playground Safety Institute (NPSI) for compliance in accordance with ASTM F 1487-98 and the USCPSC Handbook for Public Playground Safety. Contractor to provide a signed documentation of compliance certification.

END OF SECTION

SECTION 16050

ELECTRICAL GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 WORK INCLUDED

A. Furnish and install all necessary labor, materials, tools and equipment to perform and completely finish the work according to the intent of this specification, and the accompanying drawings.

B. Furnish and install any incidental work which can reasonably be inferred as required and necessary to provide complete and workable systems.

C. Provide connections of all equipment including installation and connection of all motors, relays, remote starters, etc.

1.2 LOCAL CONDITIONS

A. Examine site; verify dimensions and locations against drawings and become informed of all conditions under which work is to be done before submitting proposal. No allowance will be made for extra expenses because of omission on Contractor's apart to include cost of work under prevailing conditions.

B. Information shown relative to services is based upon available records and data shall be regarded as approximate only. Minor deviations found necessary to conform with actual locations and conditions shall be made without extra cost.

1.3 PERMITS AND INSPECTIONS

A. Obtain and pay for all permits and service charges required in installation of the work. Arrange for required inspections and secure approvals from authorities having jurisdiction.

B. During its progress, work shall be subject to inspection by Project Inspector.

1.4 CODES AND STANDARDS

A. Work and materials shall be in full accordance with California Occupational Safety Health Act (CAL-OSHA), California Electrical Code (CEC), State Fire Marshal, Electrical Safety Orders (Title 8, Subchapter 5), the National Fire Protection Association, California Building Code (CBC); California Code of Regulations – Title 24 and other applicable State or local laws or regulations. Nothing in the Drawings or Specifications shall be construed to permit work not conforming to these codes.

B. Electrical materials shall bear the label of, or be listed by, the Underwriter's Laboratories (UL) unless of a type for which label or listing service is not provided.

C. Materials and components shall conform to Industry Standards, including:

1. NEMA – National Electrical Manufacturer's Association
2. ANSI – American National Standard Institute
3. ASTM – American Society for Testing Material Association
4. IPCEA – Insulated Power Cable Owners Representative's Association
5. CBM – Certified Ballast Manufacturers

D. When Contract Documents differ from governing codes, furnish and install larger size or higher standards called for without extra charge.

1.5 REVIEW OF MATERIALS

A. Prior to commencement of work and within 35 days after award of contract, submit for approval in accordance with General Conditions all equipment and materials to be furnished including all substitutions.

1. Equipment / Product submittals shall be bound and indexed by their referenced specification section and shall include a table of contents listing all equipment submitted including description of product and part numbers. Where a group or series of products are submitted, each item does not have to be listed only the series need to be identified.

2. Shop drawings submittals shall be neat and professionally done using CAD (computer aided drafting), hand-drawn submittals will not be accepted. Shop drawings shall have sufficient information to clearly indicate work to be performed and be complete including device / equipment locations, wire sizes, wire types and number of wires, symbol list or legend, point-to-point connections, wiring diagrams, and equipment anchorage detail where needed.

B. Substitutions

1. Substitution will be considered 10 days prior to the award of the contract on each item of material or equipment. No substitutions will be considered thereafter. Substitutions will be interpreted to be all manufacturers other than those specifically listed by model or catalog number. Should the original submittal of a proposed substitution be rejected, the specified item shall be furnished.

2. Submit complete information or catalog data to show equality of equipment or material offered to that specified. No substitutions will be allowed unless requested and approved in writing. Materials of equal merit and appearance, in the opinion of the Owners Representative, will be approved for use. Owners Representative reserves the right to require originally specified item.

3. Acceptance of a substitute is not to be considered a release from the Specifications. Any deficiencies in an item, even though approved, shall be corrected by the Contractor at his expense.

4. Responsibility for installation of approved substitution is include herein. Any changes required for installation of approved substituted equipment shall be made without additional cost to Owner.

5. Where it is in the best interest of the Owner, Owners Representative may give written consent to a submittal received after expiration of designated time limits, or for an additional resubmittal.

6. Submit for approval in ample time to avoid delay of construction, shop drawings or submittals on all items of equipment and materials covered in list mentioned above. Submit in accordance with General Conditions in a complete package; partial submittals will not be considered.

7. Failure to comply with any of the preceding requirements will necessitate that the specified materials be submitted and supplied.

1.6 RECORD DRAWINGS

A. Upon completion of Work, furnish Owners Representative with complete sets of plans on reproducible vellums (not marked blueprints) upon which shall be shown all Work installed under Contract, which are note in accordance with Original Contract Drawings.

B. All symbols and designations used in preparing Record Drawings shall match those used in Contract Drawings.

C. Show all buried and concealed conduit, stubs-outs, etc. Locate all buried conduit and stub-outs by dimensions from permanent, easily located and identifiable portions of structure; also dimension ends of stub-outs, etc. Note depth of buried items below grade.

1.7 ADDENDA AND CHANGE ORDERS

A. Changes in the plans and specifications shall be made by Addenda or Change Orders signed by the Owners Representative.

PART 2 PRODUCTS

2.1 MATERIALS

A. Materials mentioned herein or on drawings require that each item listed be provided and of quality noted, or an approved equal. All material shall be new, full weight and standard in all respects and in first-class conditions. Where possible, all materials used shall be of the same brand or manufacturer throughout for each class of material or equipment.

B. Grade or quality of materials desired is indicated by trade names or catalog numbers stated herein. Dimensions, sizes and capacities shown are a minimum and shall not be changed without permission of Owners Representative.

PART 3 EXECUTION

3.1 DRAWINGS AND COORDINATION

A. Examine Drawings and Site; be familiar with types of construction where electrical installation is involved.

B. Work shall be neatly installed in a workmanlike manor in accordance with NECA Standard of Installation. Work shall be coordinated with other trades to avoid conflicts. Clarifications will be made by Owners Representative and minor adjustments shall be made without additional cost to Owner. Obtain ruling from Owners Representative concerning any obvious discrepancies or omissions in work before bidding. All work involved in correcting obvious errors or omissions after award of Contract shall be performed as directed by Owners Representative without additional cost to Owner

C. Layouts of equipment, accessories and wiring systems are diagrammatic (not pictorial), but shall be followed as closely as possible. Drawings and Specifications are for assistance and guidance, and exact locations, distances, levels, etc., will be governed by Site.

D. All equipment (devices, conduits, boxes, etc.) shall be flush or semi-flush mounted unless otherwise noted. Where conditions do not allow flush mounting and where acceptable to the Architect, equipment may be surface mounted.

3.2 WORKING SPACE

A. Provide adequate working space around electrical equipment in compliance with Article 4 of Electrical Safety Orders. In general, provide 36 inches minimum clear work space in front of panelboards and controls of 120/208 volt systems and 42 inches minimum for 277/480 volt systems.

3.3 CABLE AND CLEANING

A. All broken, damaged or otherwise defective parts shall be repaired or replaced without additional cost to Owner. Work shall be left in a condition satisfactory to Owners Representative. At completion, carefully clean and adjust all equipment, fixtures and trim installed as part of this work. Systems and equipment shall be left in a satisfactory operating condition.

B. All surplus materials and debris resulting from this work shall be cleaned out and removed from site; this includes surplus excavated material.

3.4 EXCAVATING AND BACKFILLING

A. Excavate and backfill as required for installation of electrical work. Restore all surfaces, roadways, sod, walks, curbs, walls, existing underground installation, etc., cut by installations to original condition in an acceptable manner. Maintain all warning signs, barricades, flares and lanterns as required by the Safety Orders and local ordinances.

B. Excavation: Dig trenches straight and true to line and grade, with bottom clear of any rock points. Support conduit for entire length on undisturbed original earth. Minimum conduit depth of pipe crown shall be 2 feet below finished grade.

C. Backfill: All backfill material shall be local material free of rubble, rubbish or vegetation. Provide sand as backfill material where specified. Trenches shall be backfilled and compacted to 90% (per ASTM D1557) of maximum dry density at optimum moisture content in layers not to exceed 6″ when compacted.

3.5 PROTECTION

A. In performance of work, protect work from damage. Protect electrical equipment, stored and installed from dust, water or other damage.

3.6 EQUIPMENT IDENTIFICATION

A. Panelboards, remote control switches, terminal boxes, etc., shall be properly identified with a descriptive nameplate. Nameplate shall be made of 3/32 inch laminated plastic with black background and white letters. Size of letters shall be ¼ inch high for equipment in device box or boxes 12″ or smaller, and ½ inch high for panelboard, terminal can, or larger items. Letters shall be machine engraved. Punched strip type nameplates and cardholders in any form are not acceptable. Namplates shall be attached with oval head machine screw tapped into front panel.

B. Indicate type of equipment and equipment designation, ex. “MAIN SWITCHBOARD-MSB”, “LIGHTING CONTROL PEDESTAL - SP”, Etc.

3.7 RUST INHIBITOR

A. Channels, joiners, hangers, straps, clamps, brackets, caps, nuts and bolts and associated parts shall be plated electrolytically with zinc followed immediately thereafter by treating freshly deposited zinc surfaces with chromic acid to obtain a surface which will not form a white deposit on surface for an average of one hundred twenty (120) hours when subjected to a standard salt spray cabinet test, or shall be hot dipped galvanized.

3.8 EQUIPMENT PADS

A. Concrete reinforced pads for mounting of equipment (i.e. switchboard, transformers, freestanding panels, etc.) shall be minimum 3000 psi, 6″ thick with #4 rebars at 12″ on center each way. Rebars shall be centered in pad. Pad shall extend 2″ beyond equipment and 1-1/2″ above surrounding area. Backfill and compact to 95%

maximum dry density at optimum moisture content in layers not be exceed 6″ when compacted.

3.9 EQUIPMENT ANCHORAGE

A. All equipment shall be braced or anchored to resist a horizontal force acting in any direction using the following criteria:

B. Fixed Equipment on Grade: 75% of operating weight.

C. Fixed Equipment on Structure: 50% of operating weight.

D. Simultaneous Vertical Force – Use 1/3 x Horizontal Force.

E. Where anchorage details are not shown on the drawings the field installation shall be subject to the approval of the Structural Owners Representative.

3.10 TEST

A. Test all wiring and connections for continuity and grounds; where such test indicate faulty insulation or other defects, located, repair and retest. Balance load at panelboards. Furnish all testing equipment.

3.11 CLOSING OF AN UNINSPECTED WORK

A. Do not allow or cause any work installed hereunder to be covered up or enclosed before it has been inspected and approved.

B. Should any work be enclosed or covered up before is has been approved, uncover such work and after is has been inspected and approved, make all repairs necessary to restore work of others to conditions in which it as found at time of cutting, all without additional cost.

3.12 WARRANTY

A. All materials and installation shall be provided with one (1) year warranty, which shall include replacement parts, labor, retesting, and travel to and from the job site. The warranty period shall begin after final acceptance of the project. The warranty shall cover but is not limited to the following:

B. Defective workmanship and installation

C. All system components, devices, conduit, wires, etc.

D. Manufactured items such as light fixtures, receptacles, switchboard, panelboard, transformer, switches, etc.

E. Basic materials such as conduit, wires, boxes, cabinets, etc.

F. Certain manufactured items will have longer warranty periods. Refer to specific item and specification section for warranty information and terms.

END OF SECTION

SECTION 16100

BASIC MATERIALS AND METHODS

PART 1 GENERAL

1.1 SCOPE

A. The work of this Section consists of basic materials and methods for all work included in this project. Additional specification requirements for electrical work are specified under other sections of this project.

1.2 SUBMITTALS

A. Submit product data per Section 16050 – Electrical General Requirements.

PART 2 PRODUCTS

2.1 CONDUIT

A. Rigid Steel Conduit: Standard weight, mild steel pipe, zinc coated on both inside and outside by a hot dipping or sherardizing process. Inside and outside of conduit shall be finished with a protective coating. All threads galvanized after cutting. Meets UL 6, UL Card #DYIX, and ANSI C80.1.

B. Intermediate Metallic Conduit (IMC): Intermediate weight, mild steel pipe, meeting same requirements for finish and material as rigid steel conduit. Meets UL 1242, UL Card #DYIX, and ANSI C80.6.

C. Electrical Metallic Tubing (EMT): Cold rolled steel tubing, hot-dipped galvanized, with zinc coating on outside and protective lubricating coating on inside. Fittings shall meet same requirements for finish and material as EMT. Meets UL 797 and ANSI C80.3.

D. Liquid Tight (LT) Flexible Conduit: Flexible steel, zinc coated on both inside and outside by hot dipping or sherardizing process with extruded ployvinyl covering and with watertight connectors. Conduit to be one continuous length, no couplings, minimum LT 1”.

E. PVC Conduit

1. Type 40, 90°C, UL listed, composed of polyvinyl chloride, conforming to NEMA TC-2, Fed Spec WC1094A, UL651 Standards. Material shall have minimum tensile strength of 6,500 psi at 73.4°F, flexural strength of 12,500 psi and compressive strength of 9,000 psi per ASTM testing. PVC conduit shall be suitable for direct burial without concrete encasement. Fitting shall be of same manufacture. All joints shall be solvent welded.

2. Type 80, similar to type 40 except with extra heavy wall.

F. Raceway Fittings:

1. Rigid Steel Conduit: Fittings, such as couplings, connectors, conduits, elbows, bends, etc., shall be subject to same requirements as for rigid steel conduit. Couplings and unions shall be threaded type, assembled with anti-corrosion, conductive anti-seize compound at joints made absolutely tight to exclude water. Connectors shall be threaded hubs with bonding insulated metallic bushings. Unions shall be equal to Crouse Hinds UNY or UNF.

2. IMC: Fittings shall be as specified for rigid steel conduit.

3. EMT: Fittings shall be steel, box connectors shall have insulated throat. Connectors and couplings to be compression type.

4. Flexible Metallic Conduit: Connectors to be insulated. Metallic connectors (except for liquid-tight) shall be steel “squeeze” type via a screw, Steel City XC-90X and XC-49X series. Liquid-tight metallic connectors shall be watertight approved for such use.

5. Bushings: Metallic insulated type. Weatherproof or dust-tight installations; liquid-tight with sealing ring and insulated throat, OZ/Gedney type “KR”.

6. All box connectors to be insulated throat type.

7. Conduit Straps: Galvanized steel, 2-hole straps. 1-hole straps may be used for conduit sizes 1” and smaller concealed in wall or above ceiling.

G. Metallic conduits, raceways, and fittings shall be listed and approved as grounding means.

2.2 BOXES

A. Boxes located outdoors, or in wet or damp locations shall be rated cast type with gasketed plates.

2.3 WIRES

A. Wire shall be copper only, manufactured by General Cable Co., Rome, General Electric Co., or Anaconda. Wire shall have type THW, THWN or XHHW insulation. Wire installed in high temperature areas, including branch circuits in ballast enclosures shall have type RHW-2 or XHHW-2 90° insulation.

B. Wire shall Code type copper wire of not less than 98% conductivity. Wires #8 gauge and larger, shall be stranded. Wire shall bear the Underwriters’ label, be color coded and be marked with gauge, type and manufacturer’s name on 24″ centers. Wires smaller than #8 may be solid or stranded. Where stranded wire is used, provide solid pigtail for connection to screw terminals of receptacles, switches, etc.

C. Switch legs shall use the same branch circuit phase color coding which they are connected to.

D. Bring wires to job in original unbroken packages.

2.4 CONVENIENCE OUTLETS

A. Shall be "Specification" grade rated 20 amperes at 125 volts, composition base with slots to accommodate parallel plug caps with grounding peg. Contact shall grip both sides of plug prongs. Outlet shall be UL listed.

B.

Receptacle	Hubbell	A-H	P&S	Leviton
20A duplex GFI.	GF5352	GF5242	2091S	6898

C. Weatherproof covers for receptacles shall be of heavy-duty die cast construction, self-closing type with hinged flip-lids and gasket. Each receptacle in a duplex receptacle shall have an individual lid. While-in-use rated covers shall be used at all locations.

D. Provide a separate GFI duplex receptacle at each location identified on the drawings. Through wiring is not acceptable.

2.5 SAFETY/DISCONNECT SWITCHES

A. Type "HD" Heavy-Duty safety switches with externally operated handle. Switches shall be manufactured by Westinghouse, General Electric, Square D or approved equal. Switches shall be rated 250 and 600 volts, A.C., of size and poles as shown on drawings and as required. Disconnects used outdoor shall be in NEMA-3R. Provide fused switches with proper sized fuses where required by equipment manufacturer. All switches shall have pad-locking cover with cover interlock. Label switch per section 16050.

2.6 PULL LINE

A. Furnish and install pull line in all unused (empty) raceways. 1/8″ diameter braided line of polypropylene or Jet-Line #232, or approved equal line of continuous fiber polyolefin. Minimum break strength, 200 lbs.

B. Provide pull line in conduits for utility company systems, size and type per their requirements.

2.7 PRECAST CONCRETE PULLBOXES/HANDHOLES

A. Boxes shall be size as indicated on the drawings. Design loads shall consist of live, dead, impact hydrostatic, and other loads. Design loads shall be sixteen KIPS. Concrete shall be per ASTM-C-33-64. Lightweight concrete shall conform to ASTM-C-33-64T. Cement shall be Portland Cement meeting ASTM-C-150 Type II standards. Compressive strength shall be minimum 4,000 psi at 28 days.

B. Boxes: Precast high-density reinforced concrete with end and side knockouts, and extension as required. Minimum 1-1/2″ wall thickness. Acceptable manufacturers shall be Forni, Christy or equal.

C. Covers: Reinforce concrete covers shall have hold-down bolts. All covers shall be factory marked, see drawings for marking/label required. If not noted, use the following markings:

SYSTEM	MARKING
Power 600 volts or less	Electrical
Telephone	Telephone
Lighting	Lighting

D. Installation

1. Excavate around area to accept box, a minimum of 4″ around all sides for ease of installation. Provide 12″ of compacted pea gravel for bedding and/or to facilitate drainage.

2. Backfill shall be concrete.

3. Grout and seal conduits at box entry with cement. Provide with end bells.

E. Utility Company boxes shall be per their requirements. Provide with ground rod as required.

2.8 LIGHTING CONTACTORS

A. Contactors shall be UL listed, electrically operated, for all types of lighting loads. Short circuit withstand rating shall exceed maximum available short circuit amps. Coil voltage shall match control voltage. Square-D class 8903 type LO (electrically held) or equal.

B. Contactors shall be installed on vibration isolators.

2.9 GROUND RODS

A. Ground rods shall be ¾ in dia. X 10 ft. copper clad steel.

2.10 SERVICE PEDESTAL

A. Pedestal enclosures shall be fabricated from 12 gauge hot dipped galvanized steel. Internal parts shall be fabricated from 14 gauge cold rolled steel. The pedestal shall be of all welded construction with welding materials specifically designed for the material used. All fasteners, hinged, latches and hardware shall be of stainless steel and hinges shall be continuous piano style. There shall be no exposed nuts, bolts, screws, rivets, or other fasteners on the exterior.

B. Pedestals shall be NEMA 3R and NEMA 12 with fully framed side hinged outer doors with swaged close tolerance sides for flush fit with top drip lip and closed cell

neoprene flange compressed gaskets. The door shall have 2,000 lb. stress rated stainless steel hasp, welded to cabinet and door. The pedestals shall have hinged deadfront panel with ¼ turn latch and knurled knobs. Deadfront shall be hinged on the same side as the front door and shall open on a minimum of 102°.

C. Pedestal finish shall be dry powder polyurethane plastic electrostatically applied to produce a finish of 3 to 5 mils thickness. The coating shall be commercially smooth, substantially free of flow lines, paint washout, streaks, blisters and other defects that would impair serviceability or detract from general appearance.

D. Panel shall include circuit breakers for each load with through-deadfront operating handles. Provide facilities for power company watt hour meter.

E. Provide terminal blocks for all wiring connections. Bundle and neatly install wiring in panel.

F. Provide pedestal mounting kit of standard design by control panel manufacturer for bolting to concrete slab.

G. Provide thermostatically controlled condensation heaters to help keep moisture from condensing in control panel.

H. Provide a 120V light with switch, to light up inner door and provide a weatherproof 20-ampere duplex receptacle.

I. Provide lightning arrester or surge suppressors to protect control equipment from lightning induced surges or high voltage transients.

J. Provide additional equipment and controls as indicated on drawings.

K. Current transformers and metering shall be as required by Power Utility company. All equipment shall be factory installed by the switchboard manufacturer.

L. Make provisions for the installation of utility's metering equipment and entrance conductors, all in strict conformance with the requirements of the utility company and as shown on the Drawings. Pedestal manufacturer shall be held to have submitted shop drawings of the service entrance and metering provisions to the Utility prior to manufacture. Owners Representative's shop drawing approval does not imply conformance with utility requirements. Provide for off site metering if required by the local serving utility company.

M. Small wiring, necessary fuse blocks and terminal blocks within the board shall be furnished when required. All groups of control wires leaving the switchboard shall be provided with terminal blocks with suitable numbering strips. All hardware used on conductors shall have a high tensile strength and an anti-corrosive zinc plating.

N. A one-piece copper ground bus complete with lugs shall be furnished firmly secured to each vertical section structure and shall extend the entire length of the switchboard and shall be front accessible.

O. Ground bus current rating to be same as main device.

P. Pedestal main and distribution circuit breakers shall be molded case bolt-on type with trip rating as scheduled on Drawings.

Q. Pedestal shall be labeled to serve as "Service Entrance Equipment".

R. Each circuit breaker shall be identified with an engraved laminated phenolic plate showing the load served or the function of the circuit breaker and trip rating. The nameplate shall be attached with oval head machine screws tapped into the front of the board. Equip breaker handles with padlocking "lock-off" devices.

S. Pedestal shall be completely factory assembled, wired and tested before delivery and shall conform to UL where applicable, WUESSC, National Electrical Code Standards and State of California requirements.

T. Where pedestal has facilities for revenue metering, comply with the requirements of servicing utility company. Provide heaters with control thermostat to maintain temperature of 55 degrees Fahrenheit minimum inside switchboard.

U. The board shall be as manufactured by Tesco or approved equal.

PART 3 EXECUTION

3.1 CONDUITS

A. All Exposed Conduits shall be rigid steel or IMC. Obtain Architect approval prior to installing any exposed conduits.

B. Provide flexible connections of short length to equipment subject to vibration or movement and to all motors. Provide a separate bonding conductor in all flexible connections. Flexible conduit shall be one continuous length with couplings.

C. Support conduit with straps and secure to concrete by means of insert or expansion bolts. Expanders and shields shall be steel or malleable iron.

D. Conduits installed in contact with ground shall be PVC-40 conduits.

1. Install PVC conduit in a 2″ sand or fine earth envelope below ground. Provide a minimum of 2″ of sand or fine earth bedding at the bottom of the trench before laying conduits. Risers, including elbows, shall be double-wrapped rigid steel or PVC coated rigid steel conduit; except that risers, including elbows and bends; at in-ground pull box locations shall be PVC-40, concrete encased.

2. When installing underground conduits to specified depth, depth shall be taken from the top of the conduit to the finished grade level. Unless otherwise specified, underground conduits shall be installed with topside not less than 24″ below finished grade.

3. Utility Company (electric, telephone, etc.) conduits shall be installed per their depth and backfill requirements. Minimum depth shall be 24″ below finished grade. Minimum conduit shall be PVC-40. Where the utility company allows use of a “lesser” grade conduit, i.e. DB120, PVC-40 shall be used.

4. The minimum size of conduits shall be 1″.

5. Bends shall be wide sweeping type with radius equal to 10 times O.D. and minimum 24 inch.

6. Place a 6″ wide non-biodegradable plastic tape at 12″ below grade, labeled “CAUTION ELECTRIC LINE BURIED BELOW”. Fluorescent red for electric power conduits and fluorescent orange for telephone conduits. Tape shall be continuous for full length of trench.

E. Although circuiting is shown as diagrammatic, their point-to-point destinations and their indication above/below ground route shall be followed as much as possible. Where site conditions dictate that an alternate means of routing will alleviate conflicts, the alternate means will be considered with prior approval by the Architect. Route conduits below paved roadways where possible.

F. Feeder conduits connected to panels/switchboard shall have ground lug bushing connected to equipment ground bus.

3.2 CAPPING

A. Cap conduits during construction with manufactured seals. Swab out conduits before wires are pulled in.

B. Cap all empty conduits below grade and in pull boxes with manufacturer’s caps to prevent entrance of water and debris, attach pull string to cap.

3.3 CONDUCTORS

A. Splices and joints shall be made with Burndy, T & B or approved equal, solderless tool applied pressure lugs and connectors, Uninsulated lugs and wire ends shall be insulated with layers of plastic tape equal to insulation of wire and with all irregular surfaces properly padded with “Scotchfil” putty tape prior to application of tape. Tape shall equal to Scotch #33, General Electric #AW-1 or approved equal. Feeder splicing is not permitted.

B. Conductor splices below grade where approved shall meet ANSI C119.1-1986 and UL 486D standards. Raychem RVA or RVC series. Conductors to be joined with compression sleeve connectors.

C. Use only UL approved wire pulling compound as lubricant.

D. Lace conductors together with waxed linen lacing cord, T &B “Ty-Rap”, Holub “Quik-Wrap” or equal, in a neat and workmanlike manner in panelboards, wireways, raceways, pull boxes and similar locations.

E. #10 AWG wire shall be minimum size wire used.

F. All conductors shall be in conduit unless otherwise indicated.

G. Conduit sizes shall be based on code fill table for THW insulated wires to accommodate the number, size and type of wires shown or specified.

H. Wiring installed in pull boxes or junction boxes, shall be pulled through without splices shall have a service loop around the interior of the box for 360 degrees utilizing the largest circumference.

I. Where conductors are increased in size and number (such as for voltage drop reasons), and such that conductors will not fit the standard breaker or panel lugs, terminate in one of the following manners:

1. Provide larger breaker frame.

2. Provide oversized lugs.

3.4 GROUNDING

A. Ground fittings shall be approved manufactured type, installed and connected conform with Code requirements.

B. Neutral conductors and noncurrent-carrying parts of equipment at each installation shall be grounded in accordance with applicable code. Ground conductor shall be copper having a current capacity sized in accordance with CEC.

C. All equipment cases, equipment frames, etc., shall be completely grounded to satisfy requirements of CEC. Install bond wire in flexible conduit. Install copper bond wire, sized in accordance with CEC, in all nonmetallic raceways and bond to all metallic parts using approved fittings.

D. Service ground conductor shall be connected to “Ufer” electrode, concrete encased ground, per CEC 250.

E. Ground resistance shall not exceed 25 ohms as measured at MSB.

F. All connections shall be made with solderless connectors or molded fusion-welding process.

G. Equipment grounding conductors shall be insulated with a continuous green outer finish along its entire length. Conductors size #4 AWG and larger may be identified (with green electrical tape applied half-lapped) at each end and at every point where the conductor is accessible.

H. Insulated grounded (neutral) conductors shall be identified with a continuous white outer finish along its entire length. Neutral conductors #4 AWG or larger can be identified by a distinctive white marking (applied half-lapped with white electrical tape) for the last 12 inches at each end.

I. Where equipment is 1000 volts or above, fence grounding shall be provided with a ground rod at each fixed gate post and at each corner post. Attach #4 ground wire exothermic weld to ground rod, and with compression ground post clamp to post. Each gate shall be bonded to its gatepost by flexible braided copper strap.

3.5 FIELD TESTS

A. Provide required labor, materials, equipment and connections to perform tests. Document results and submit them to the Owners Representative. Repair or replace all defective work.

B. Perform Megger test on all feeders and motor branch circuits.

C. Verify operation of all controls and adjust time settings per Architect.

D. Each ground rod shall be tested. A ground rod which does not have a resistance to ground of 25 ohms or less shall be augmented by one additional ground rod at no less than 8 ft. from each other.

E. CLEANING

F. Brush and clean work prior to concealing, painting and acceptance. Performed in stages if directed.

G. Clean and repair soiled or damaged painted exposed work and match adjoining work before final acceptance.

H. Remove debris from inside and outside of material, equipment and structures.

END OF SECTION

SECTION 16500

LIGHTING

PART 1 GENERAL

1.1 SECTION INCLUDES

Furnish and install a complete lighting system consisting of overhead luminaires, structural lighting and appurtenances as show on drawings and specified.

1.2 WORK INCLUDED

A. The requirements of Sections 16050, 16100 apply to the Work of the Section.

1.3 SUBMITTALS

A. ground information, photometric data, fixture efficiency, ballasts information, lamp information, weights, accessories, etc.

B. Submit per Submittal Specification Section

PART 2 PRODUCTS

2.1 LUMINAIRES

A. Weatherproof fixtures shall have weatherproof gaskets on fixture trim and door assemblies. Fixture shall be UL listed for wet locations.

B. Luminaire voltage indicated on the plans is for reference. Verify actual voltage required based on the branch circuit.

C. Housing shall be prefinished. Color to be selected by Architect.

2.2 LIGHT POLES

A. Poles shall be as shown on the drawings with a minimum wind rating 90 mph with a 1.3 gust factor. Base dimensions shall be as directed by the structural engineer at each pole location.

B. Reflector optical systems shall be high reflectance prefinished.

PART 3 EXECUTION

3.1 INSTALLATION

A. Mounting of luminaires shall be in strict accordance the CEC Section 410.

B. Install per manufacturer's specifications for all specified (or approved equal) products.

END OF SECTION

SECTION 265600

EXTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Exterior luminaires.
2. Poles and accessories.
3. Pole base foundation covers.

1.3 DEFINITIONS

A. CCT: Correlated color temperature.

B. CRI: Color-rendering index.

C. Luminaire: Complete lighting fixture, including ballast housing if provided.

D. Pole: Luminaire support structure, including tower used for large area illumination.

E. Standard: Same definition as "Pole" above.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For luminaires to include in emergency, operation, and maintenance manuals.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, product(s) indicated on Drawings.

2.2 GENERAL REQUIREMENTS FOR LUMINAIRES

A. Luminaires shall comply with UL 1598 and be listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction.

B. Metal Parts: Free of burrs and sharp corners and edges.

C. Sheet Metal Components: Corrosion-resistant aluminum unless otherwise indicated. Form and support to prevent warping and sagging.

D. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.

E. Luminaire Finish: Manufacturer's standard paint applied to factory-assembled and -tested luminaire before shipping. Where indicated, match finish process and color of pole or support materials.

PART 3 - EXECUTION

3.1 LUMINAIRE INSTALLATION

A. Comply with CEC Article 402.

B. Fasten luminaire to indicated structural supports.

1. Use fastening methods and materials selected to resist seismic forces defined for the application and approved by manufacturer.

3.2 POLE INSTALLATION

A. Clearances: Maintain the following minimum horizontal distances of poles from surface and underground features unless otherwise indicated on Drawings:

1. Fire Hydrants and Storm Drainage Piping: 60 inches.
2. Water, Gas, Electric, Communication, and Sewer Lines: 10 feet.
3. Trees: 15 feet from tree trunk.

B. Foundation-Mounted Poles: Mount pole with leveling nuts and tighten top nuts to torque level recommended by pole manufacturer.

1. Use anchor bolts and nuts selected to resist seismic forces defined for the application and approved by manufacturer.
2. Grout void between pole base and foundation. Use non shrink or expanding concrete grout firmly packed to fill space.
3. Install base covers unless otherwise indicated.
4. Use a short piece of ½ inch diameter pipe to make a drain hole through grout. Arrange to drain condensation from interior of pole.

C. In areas where pole are subject to severe damage, pole foundation shall be set at 3 feet above finished grade.

3.3 FIELD QUALITY CONTROL

A. Inspect each installed fixture for damage. Replace damaged fixtures and components.

B. Illumination Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source.

1. Verify operation of photoelectric controls.

END OF SECTION

SECTION 265670
SOLAR POWERED PATH AND SPORT LIGHTING

PART 1- GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Solar Powered Outdoor Lighting

1.2 REFERENCES

A. International Electrotechnical Commission
   1. IEC 61730-1:2019
   2. IEC 61215-2:201
   3. IEC/EN 61000-3.2
   1. IEC/EN 61000-3.3
   2. IEC/EN 62493
   3. IEC/EN 62031
   4. IEC/EN 62471
   5. IEC/EN 61347-1
   6. IEC/EN 61347-2-15
B. International Organization for Standardization (ISO)
   1. 9001-2015 – Quality Management Systems
C. European Standards
   1. CE/Rohs

1.3 DESCRIPTION - DEFINTIONS

A. "**System Location**" is the exact location of the system installation. The geographic coordinates are used to determine anticipated Solar Insolation.
B. "**Solar Insolation**" is the amount of solar radiation available at the geographic location. Properly designed systems will use the lowest minimum monthly average (typically December in the Northern Hemisphere) when calculating the Array size.
C. **"Photovoltaic or PV"** a method of converting solar radiation energy into direct current electricity.
D. "**Lighting Profile**" is the way in which the LED Luminaire is powered throughout the night accumulating to give the total energy used by the system. This is sometimes referred to as the dimming profile as luminaries can be set to dim the light output for a portion of the night to reduce the total energy load of the system.
E. **"Photovoltaic Panel Tilt Angle"** – The angle relative to horizontal, to which the PV panel is tilted while pointing towards the equator. Tilt angle influences the amount of energy that can be collected at a given location at specific time of year.
F. **"LED Luminaire**" is a complete lighting fixture housing solid state lights, lens optics, and heat sink.
G. "**Luminaire Wattage**" is the energy used by the luminaire to produce light. Used in the calculation of the system load.
H. "**Light Distribution**" are general IES classification for different types of optics used to project the light emitted from the LED. Each type projects the light in different ways which allows designers to optimize the light uniformity for a given area.
I. "**Light uniformity**" is how well the light from multiple luminaires is distributed over a given

photometric study area. Typically, a ratio of the (maximum or average) amount of the light projected on the area and the minimum light value calculated within the area.

J. **"IES LM 79"** – is a standardized test which measures total luminous flux, luminous intensity distribution, electrical power, efficacy (lumens per watt delivered), and color characteristics (chromaticity, CCT, and CRI) of the complete luminaire. This test must be done by an accredited independent laboratory.

K. "**Color Temperature**" – measured in Kelvin, denotes how warm or cool the color produced by the luminaire is. Typically, 3000k-4000K.

L. "**Batteries**" – how the energy produced by the PV array is stored for nighttime use to power the luminaire load.

M. "**SOC**" is level of **charge** of an electric battery relative to its capacity.

N. "**Anti-Blackout**" – Load management based on battery state of charge.

1.4 SUBMITTALS

A. Specification Conformance Document:

Manufacturing will provide documentation system complies with all technical specification requirements in order to be considered compliant with bid submittals.

B. Product Data: Catalog cut sheets with performance specifications demonstrating compliance with specified requirements.

C. IES electronic files of lamp output and/or Photometric Plots on a surface from a defined lamp height compliant with IES LM-79. Winter light level should be noted with files and/or reflected in any lighting plots.

D. LM-79 and report for chosen Luminaire confirming efficacy values.

E. Calculation of Effective Projected Area (EPA) and weight of the solar lighting system, and EPA rating of the pole (if provided).

F. System Calculation
1. Photovoltaic Array Sizing.
2. Luminaire load.
3. Depth of Discharge

G. Line drawing or photograph of lighting system(s).

H. Wiring diagram(s).

I. References of at least 10 installation sites for the submitted manufacturer.

J. Installation Instructions.

K. Passed testing results

1.5 QUALITY ASSURANCE

A. Manufacturer: Minimum 10 years of experience in manufacture of solar powered lighting systems.

B. Minimum of 150,000 of the same solar lighting platform previously installed.

C. Manufacturer must demonstrate sufficient financial reserves to satisfy all outstanding warranty liability.

D. Solar lighting as a system must have successfully completed testing by an independent United States laboratory
1. Solar lighting manufacturer must provide completed and passed testing results in the submittal package

1.6 SAFETY COMPLIANCE

A. Photovoltaic Panel is Nationally Recognized Testing Laboratory listed per UL/CSA 1703 or IEC 61730-1:2019 & IEC 61215-2:2017.

B. Luminaire approved by a Nationally Recognized Testing Laboratory.

1.7 OTHER COMPLIANCES

A. Battery shall be considered non-dangerous goods by the ICAO, IATA, IATA special Provisions A199, and IMDG

1.8 PROJECT CONDITIONS

A. Ambient temperature: -40° to 70° C. (-40°F to 156°F)

B. Pole and all coupling components exceed maximum specified EPA ratings required for local wind loading conditions.

C. Pole foundations will be designed or reviewed my local engineering firm to ensure local building codes are followed.

1.9 PERFORMANCE AND SOLAR CALCULATIONS

D. Sizing Criteria and Project Requirements for Olivehurst, CA:

1. Sun Hours (Insolation) based on global coordinates: 2.15kWh/m² per day.
2. Longest Night: 14.48 hours
3. Latitude: 39.0954° North / Longitude: -121.5522° East
4. Singles: Must be able to demonstrate through solar study, energy calculations, and system sizing the ability to achieve a minimum of 31W for 4 hours post-dusk, 1 hour pre-dawn, and 20% during the in between hours.
5. Twins: Must be able to demonstrate through solar study, energy calculations, and system sizing the ability to achieve a minimum of 30W for 4 hours post-dusk, 1 hour pre-dawn, and 20% during the in between hours PER FIXTURE.
6. Luminaire Temperature: Must have all luminaire CCT options of ≤ 3000K, or ≤ 4000K
7. LED driver must be integrated with the solar charge controller as one unit.

E. Manufacturer shall submit detailed information on how the sizing was calculated including the formula with details on all factors included. Sizing shall demonstrate that the worst case SOC will support the proposed light level all year long.

F. Manufacturer shall provide a photometric layout meeting the specified standard or the specified light levels and uniformity. Light Loss Factor shall be consistent with specification.

G. Photometry must be based on “worst case” calculated light levels in winter – accounting for any anticipated Anti-Blackout or Energy Management adjustments

1.10 WARRANTY

A. Provide manufacturer’s non-prorated warranty covering 8 full years parts and labor on entire solar lighting system including battery from date of purchase.

1. Local support can be provided by the manufacturer or their trained and authorized representative.

B. Solar Voltaic Panel covered for minimum 25 years for power output.

1.11 REGULATORY REQUIREMENTS

1. CE

1.12 BATTERY STORAGE AND SHIPPING

A. Batteries non-hazardous and approved for shipping via ground, air, or sea.

B. If storing batteries for future installation: must be stored inside above in a temperature-controlled environment.

C. If batteries are stored for longer than 4 months past the date received, they will need to be recharged before being installed to ensure battery and system performance.

PART 2- PRODUCTS

2.1 SYSTEM – General Design

A. Basis of design product: PV System will be attached at the top of the pole with an integrated or separately mounted battery container.

B. Manufacturers: Fonroche Lighting America, Forest Hill, TX

Contact: Sales@Fonroche.US | 339-225-4530

C. Substitutions:

1. All proposed substitutions must be submitted in writing for approval by the design professional a minimum of 10 working days prior to the bid date and must be made available to all bidders.
2. Singles: All proposed substitutes must be accompanied by documentation the system uses NiMH battery technology of ≥624Wh, ≥160W solar collection, has polycarbonate plug-n-play power center, LoRa central control capabilities with >50,000 connected units, solar study of system consumption & production curves for Olivehurst, CA solar irradiance, ≥180lm/watt light fixture with independent lab test results, and conducts climatic chamber, dedicated battery, module, & cell testing in various environmental conditions.
3. Twins: All proposed substitutes must be accompanied by documentation the system uses NiMH battery technology of ≥1248Wh, ≥310W solar collection, has polycarbonate plug-n-play power center, LoRa central control capabilities with >50,000 connected units, solar study of system consumption & production curves for Olivehurst, CA solar irradiance, ≥180lm/watt light fixture with independent lab test results, and conducts climatic chamber, dedicated battery, module, & cell testing in various environmental conditions .

2.2 GENERAL – Solar Powered Light Systems

A. Solar Powered Light System consists of six (6) components and assemblies: (1) Photovoltaic (PV) Module(s) (2) Mounting structure, (3) LED Luminaire, (4) Sealed Power Center (5) Weatherproof Wire Harnessing (6) Pole. Luminaire and PV assemblies shall be separate units, allowing for independent orientation of both the lighting and solar panel to achieve optimal performance. System will at a minimum include the following characteristics.

1. Photovoltaic (PV) Module

a. Construction:

1) Crystalline silicon solar cells Rated at Minimum 160W for Singles and 310W for Twins.
2) Aluminum Frame
3) UL/CSA 1703 or IEC 61730-1:2019 and IEC 61215-2:2017
4) Sealed behind UV stabilized tempered glass.
5) Black Frame and Backing Sheet for finished appearance.
6) Covered by a 25-year power output warranty.
7) RoHS compliant
8) Cabling will be UV resistant.
9) Water-tight wire junction box on PV module
10) Mount assembly shall be galvanized, and powder coated with adjustable tilt from 10 degrees to 45 degrees to optimize system performance and EPA.

b. Performance:

1) PV electrical junction box and connectors (MC4 type) are sealed per IP 67.
2) PV is fastened to support system at a minimum of four locations.

2. LED Luminaire
   a. Design and dimensions
      1) Fixture to be decorative “Opera” style pendant, flaring at a straight angle from the top smaller diameter to the larger bottom diameter
      2) Fixture to be 19.5” high x 17.5” diameter (at bottom of luminaire)
   b. Construction
      1) Housing: Cast Aluminum Alloy alloy with decorative housing
      2) Heat Sink: Extruded Aluminum Integrated in LED Module
      3) LED Module impact rating of IK09
      4) LED Module Ingress Protection IP68
      5) Finish: Powder Coated Marble Rose or Bronze Roman
   c. Performance:
      1) 4000K temperature.
      2) Efficacy 180 – 190 lumens per watt
      3) DarkSky International Compliant (at 3000K)
      4) The manufacturer provides relevant .IES files to indicate light dispersion and intensity of LED source.
   d. Certifications
      a) IEC/EN 55015 -
      b) IEC/EN 61547 -
      c) IEC/EN 61000-3.2-
      d) IEC/EN 61000-3.3 -
      e) IEC/EN 62493
      f) IEC/EN 62031 -
      g) IEC/EN 62471-
      h) IEC/EN 61347-1 -
      i) IEC/EN 61347-2-15
   e. Warranty
      1) 8-year full, non pro-rated warranty
3. Power Center shall be sealed, pre-loaded with batteries and fully pre-wired.
   a. Construction:
      a) Enclosure
         . Enclosure shall be IP65 and provide an IP68 screw in valve to safely relieve pressure inside the enclosure. Valve shall be waterproof, oilproof, breathable, UV Resistant with anti-vibration.
         . The power center enclosure shall be separate and independent from the solar panel to allow for proper ventilation.
         . Enclosure shall be high strength polypropylene with anti-UV treatment.
         . The power center shall be connected to the panel and lighting fixture(s) with two, external waterproof connectors.
         . Holds from one to four battery packs for a total weight of no more than 50 LBS.
      b) Controls
         . LED driver must be integrated with the solar charge controller as one unit.
         . Charge controller/ LED driver must be capable of controlling and dimming one or two outdoor luminaries.
         . Control circuit board shall have a protective conformal coating.

. Over Voltage Protection.
. Internal PV Disconnect
. Reverse battery polarity protection.
. Self-calibrating load, timing, and charging circuitry.
. Charge Controller operates with temperature compensated limits ensuring battery charging algorithm protects battery (ies) from over and under voltage stress.
  . Charge controller adapts maximum (charged) voltage based on temperature.
  . Charge controller prevents discharge below battery Low Voltage Disconnect (LVD) limit.
  . Battery Management Function to balance cells.
  . Anti-Blackout Protection

c) Singles Battery Minimum Capacity 624 Whrs
. Battery shall be maintenance free NiMH or Nickel Metal Hydride
. Air shippable.
. Battery shall be rated “Non-Hazardous” by ICAO/IATA/DOT.
. 100% recyclable.
. Battery must be built to comply with UL 2054.
. Formulated for charging and operating temperature from -40°C to +70°C

d) Twins Battery Minimum Capacity 1248 Whrs
. Battery shall be maintenance free NiMH or Nickel Metal Hydride
. Air shippable.
. Battery shall be rated “Non-Hazardous” by ICAO/IATA/DOT.
. 100% recyclable.
. Battery must be built to comply with UL 2054.
. Formulated for charging and operating temperature from -40°C to +70°C

b. Performance
1) Able to perform for duration of at least 3650 cycles.
2) Operates in the prescribed Lighting Profile as per the Performance and Solar Calculations found above in 1.9.
3) Able to provide all night lighting 365 nights per year.

c. Wire Harnessing Wire Harnesses Construction
1) All UV stabilized jacketed wiring and connectors.
2) Provided with weather tight enclosures.
3) Provided in variable lengths to eliminate all field wiring.

d. Wire Harness Performance:
1) Sealed gasketed connectors prevent dust intrusion.

4. Solar Lighting Pole, PV Structure pole
a. Construction:
1) Overall Length will be long enough to accommodate luminaire mounting height with enough clearance for the PV panels to be positioned correctly without contacting the mounting arm.
2) Poles and brackets will be constructed out of powder coated galvanized steel, which

have been engineered to meet the weight and EPA requirements of the full system and applicable building codes.

3) Attached to an engineered concrete base.

4) Stainless steel or zinc plated steel hardware for rust-proof and corrosion resistant mounting equipment.

5) Pole meets ANSI C136.36A-2010, for Roadway and Area Lighting Equipment-Aluminum Lighting Poles.

b. Pole Performance:

1) Pole Design will meet engineering requirements based on the system's weight, EPA and wind rating for that geographic locations.

2) Independently verified pole strength and base details by licensed Professional Engineer and Test Lab.

3) Pole manufacturer must be able to supply an anchor base pole in a 20' option.

c. System Support Structure Performance:

1) The PV support structure and battery cabinet shall mount to a 2.8575" OD X 6" Tenon

5. Arm

a. Construction: cast aluminum arm and adapter assembly. Arms will not have any exterior bolts or clamping devices.

b. 3.3' in length

c. Finish: Same as pole

d. Mounting: Attachment point on pole will be relative to the final luminaire height as stated in the photometric design.

6. Solar lighting manufacturer must have the capability to provide two-way LoRa and cellular based wireless central system monitoring and control.

a. Controls must be based on cellular gateway, and each light point must include on-board LoRa radio.

b. Central monitoring and control must contain end user accessible web-based dashboard.

1) Web-based dashboard must include state of battery charge, system connectivity, CO2 reduction, and each light point must be visible on the portal map.

PART 3- EXECUTION

3.1 INSTALLATION

A. Install equipment in accordance with manufacturer's installation instructions.

B. Provide complete installation of system in accordance with Contract Documents.

END OF SECTION

SECTION 311000

SITE PREPARATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Locate and mark existing utilities within the limits of work.

B. Remove existing trees, including root ball, within the area of work, as indicated on plan.

C. Remove existing surface improvements within the area of work as indicated on plan.

D. Remove existing subsurface utilities, including appurtenances, within the area of work, as indicated on plan.

E. Properly dispose of all excess and unsuitable material.

F. Strip all areas within the limits of work as indicated on the plan.

G. Deploy and subsequently remove temporary construction area and tree protection fencing at completion of construction.

H. Install and maintain erosion control measures.

1.2 RELATED SECTIONS

A. Earthwork - Section 312000

B. Trenching, Backfilling and Compaction - Section 312316

1.3 REFERENCES

A. Reference Data:
1. If the year of the adoption or latest revision is omitted from the designation, it shall mean the specification, manual or test designation in effect the date the Notice to Proceed with the work is given.

B. Caltrans Standard Plans and Specifications.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 TREE PROTECTION

A. Erect and maintain temporary fence around drip line of individual trees or around perimeter drip line of groups of trees to remain. Remove fence when construction is complete.

B. Do not store construction materials, debris, or excavated material within drip line of remaining trees.

C. Do not permit vehicles or equipment within drip line of remaining trees.

D. Do not excavate within drip line of remaining trees, unless otherwise indicated.

E. Where excavation for new construction is required within drip line of trees, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation edge as possible.

1. Cover exposed roots with burlap and water regularly.

2. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

3. Coat cut faces of roots more than 1-1/2-inches in diameter with an emulsified asphalt or other approved coating formulated for use on damaged plant tissues.

4. Cover exposed roots with wet burlap to prevent roots from drying out. Backfill with soil as soon as possible.

F. Also see Tree Protection requirements outlined on Construction Drawings.

RESTORATION

A. Restore damaged improvements to their original condition, as acceptable to the Owner.
B. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, as directed by the Owner.

1. Employ a qualified, licensed arborist, to submit details of proposed repairs and to repair damage to trees and shrubs.

2. Replace trees that cannot be repaired and restored to full-growth status, as determined by the Owner.

3.2 CLEARING AND GRUBBING

A. Install tree protective fencing around trees designated to be saved, prior to the start of demolition work. See Civil and Landscape Plans and Specifications. Install fencing as far from the trunk as possible to allow for construction of proposed improvements. Maintain fencing throughout duration of construction.

B. Use only hand methods for grubbing within drip line of remaining trees.

C. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.

D. The area above the natural ground surface shall be cleared of all vegetation such as trees not designated to be saved, roots, brush, grass, weeds, and all other objectionable material including buildings (footings, slabs, etc.), asphalt, concrete, curbs, mulch, headerboard, ramps, stairs, utility piping (including appurtenances), bike racks, fences/gates, site furniture, and similar materials, within the limits of construction.

E. All concrete and asphalt pavements and other existing improvements within the areas to be developed should be removed during site demolition. At the Contractor’s option, salvaged class 2 aggregate base material may be stockpiled for reuse.

F. Existing building foundations should be entirely removed below final subgrade in the building pad areas, and to a depth of at least three feet in areas outside the building footprints. The excavations beneath the planned building area should be backfilled with engineered fill. See also Section 312000.

G. The natural ground surface within the entire site, except within the tree protection zones, shall be grubbed to a depth necessary to remove all stumps, buried logs, roots over 2-inches in diameter, and all other unsuitable material. Stumps shall be removed to a depth of at least 24” below original grade.

H. Existing utilities designated to be removed that do not conflict with proposed improvements may be

abandoned in place. If they are abandoned in place, the utility shall be slurried and capped. Any portions of these utilities that conflict with the new improvements shall be removed.

I. All unsuitable material shall be removed from the construction area and disposed of properly. Comply with hazardous material abatement regulations that may apply.

3.3 DEMOLITION SEQUENCING

A. Permanent and/or temporary facilities may need to be installed prior to demolition to limit utility outages. Any planned and or necessary interruption of existing utilities shall be coordinated with the Construction Manager. A minimum of one week's notice shall be provided before any such interruption.

3.4 STRIPPING

A. The upper soils containing grass, small roots, and other vegetation, to a depth of 4+/- inches, shall be stripped from and removed from the site. Deeper stripping may be required in localized areas to remove roots or other concentrations of organic material.

B. Dust control shall be performed by the contractor during all phases of the construction. Payment for the dust control work involved shall be considered included in the items of work and no additional allowance will be made therefor.

C. The Geotechnical Engineer will observe the clearing and stripping operations and recommend the maximum depth of stripping required and any additional excavation necessary due to contamination of materials or concentrations of vegetation.

D. All suitable stripped material in excess of those needed to backfill landscape and/or planter areas shall be removed from the project site and disposed of properly.

3.5 CLEARED MATERIAL

A. The objectionable cleared material including buildings (footings, slabs, etc.), curbs, mulch, headerboard, ramps, utility piping (including appurtenances), bike racks, fences/gates, site furniture, etc., shall be removed from the project site and disposed of properly.

3.6 STRIPPED MATERIAL

A. Excess and objectionable stripped material including asphalt and concrete pavements, grass/vegetation, etc. shall be removed from the project site and disposed of properly. Contractor is encouraged to recycle the existing aggregate base materials for use in hardscape areas only (non-building).

3.7 EROSION AND SEDIMENT CONTROL

A. Install and maintain erosion control devices/measures, including, but not limited to drainage inlet protection, fiber rolls, silt fence, etc., until such time as all vegetative and hard surface improvements within their individual tributary areas are completed. Provide periodic maintenance of all such devices, and following completion of said improvements, remove and dispose of erosion control devices and repair surfaces to match final specified surface finishes.

B. Any areas where ground has been disturbed, and where final landscaping has not been installed, will require the installation and maintenance of erosion control devices by the Contractor, as generally noted in the Erosion Control Notes on the plans.

C. Additionally, the Contractor shall implement and adhere to the requirements of the Storm Water Pollution Prevention Plan (SWPPP), including, but not limited to, rain event inspections, storm water discharge sampling and analysis, vehicle/equipment maintenance, and cleaning, etc..

3.8 SURFACE IMPROVEMENT AND UTILITY REMOVAL AND RELOCATION

A. The Contractor shall have Underground Service Alert mark all existing public utilities as a first order of work. Additionally, the Contractor shall have a locating service mark all existing private utilities within the limits of work.

B. The Contractor shall pothole each existing utility that will be extended or reused at its point of cut and removal to confirm the actual locations and depths as well as all proposed crossings as shown on the drawings. Notify Engineer of results via the RFI process.

C. Existing water, sewer, storm drain, gas, electrical, communication (data) services and laterals to be abandoned or removed as indicated on the plans shall be provided with replacement facilities as to comply with construction sequencing requirements and limit utility/service outages as required by the Owner.

D. See Utility, and Civil plans for detailed removal/replacements requirements.

3.9 CLEAN UP

A. Remove all debris and stains resulting from the work of this section.

END OF SECTION

Section 312000

EARTHWORK

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Description of suitable materials for earthwork operations.

B. Definitions of terms.

C. Description of the duties and responsibilities of the Geotechnical Engineer.

D. Excavate earth, rock, and all material regardless of character and subsurface conditions.

E. Requirements for excavation, over excavation, and disposal of surplus and unsuitable material off the project site.

F. Dewatering of excavations.

G. Spread and compact engineered/import/select fill.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including the Division 01 Specification Section, apply to this Section.

B. Related Sections include the following:
1. Site Preparation - Section 311000
2. Trenching, Backfilling and Compaction - Section 312316

1.3 REFERENCES

A. Reference Data:
1. If the year of the adoption or latest revision is omitted from the designation, it shall mean the specification, manual, or test designation in effect the date the Notice to Proceed with the Work is given.

1.4 EXISTING CONDITIONS

A. It is the Contractor's responsibility to achieve the finished grades shown on the plan, and to determine the quantity of and provide for soil import or export required to achieve plan grades.

1.5 SUBMITTALS

A. Submit test reports and compaction curve analysis for engineered fill required in accordance with Submittal requirements, including Geotechnical Report.

1.6 DEFINITIONS

A. Standard Specifications
   1. Where referred to in these specifications, "Standard Specifications" shall mean the State of California Standard Specifications, latest edition. All work shall be carried out in conformance with the Standard Specification, unless otherwise specified herein.
   2. Where referred to in these specifications, "County" shall mean the latest edition of the standard code, regulations, plans, and drawings of Merced County. All work shall be carried out in conformance with the referenced standards.
   3. Site Grading shall comply with the applicable sections of Title 24 and of Appendix J of the California Building Code, latest adopted edition.

B. Percent Compaction -- As referred to in these specifications, percent compaction is the required in-place dry density of the material, expressed as a percentage of the maximum dry density of the same material determined by the ASTM D 1557 test procedure.

C. Optimum Moisture Content -- As referred to in these specifications, optimum moisture content is the moisture content, percent (by dry weight), corresponding to the maximum dry density of the same material as determined by the ASTM D 1557 test procedure.

D. Soil Subgrade – Where used in these specifications, soil subgrade shall mean within exterior slab areas, the surface on which aggregate base material is placed, and within building areas, the surface on which footings bear and/or on which floor slab structural section is placed.

PART 2 - PRODUCTS

2.1 IMPORT FILL

A. Import fill shall be material consisting of soil and rock mixtures that: 1) are free of organic material. 2) have a Liquid Limit less than 40 and a Plasticity Limit of less than 20, and 3) have a maximum particle size of 6 inches.

B. In general, the onsite soils, to the extent that they may be available, will be suitable for use as fill, provided they are prepared as described below.

C. General engineered fill shall be approved by the Soils Engineer prior to fill placement.

PART 3 - EXECUTION

3.1 SPILLAGE, DUST AND EROSION CONTROL

A. The Contractor shall prevent spillage when hauling on or adjacent to any public streets or highways. In the event that such occurs, the Contractor shall remove all spillage and sweep, wash or otherwise clean such streets or highways as required by local and County authorities and/or the State of California.

B. The Contractor shall take all precautions needed to prevent a dust nuisance to adjacent public or private properties and to prevent erosion and transportation of soil to downstream adjacent properties. Any damage so caused shall be corrected or repaired by the Contractor at no cost to the Owner.

3.2 EXCAVATION

A. Following clearing and stripping, over excavate existing subgrade materials in non-building areas to planned subgrade. The over excavations should extend three feet beyond the edges of exterior hardscape edges, as required. The over excavated materials may be stockpiled and reused as properly placed compacted/engineered fill. The excess and unsuitable excavated material shall be disposed of properly, offsite.

B. The upper 8” of all exposed exterior hardscape subgrade soils shall be scarified, thoroughly moisture-conditioned to at least 3% above optimum moisture content, and compacted to at least 90% relative compaction. The upper 6” of subgrade in asphalt pavement areas shall be compacted to at least 95% relative compaction.

C. Once compacted, the subgrade materials should be maintained at least 3 percentage points above optimum moisture content prior to placement of additional fill or aggregate base material. This is likely to require periodic sprinkling during the dry season. Should drying of the soils occur, they should again be scarified, moisture-conditioned to the proper moisture content and recompacted.

D. Recompacted subgrade shall have a firm and unyielding surface under the observation of the Geotechnical Engineer or their designated representative. If excessive pumping or instability is observed, over excavation and the placement of a stabilizing fabric and a 12” to 18” thick layer of class 2 aggregate base may be required by the project Geotechnical Engineer.

E. Final surfaces exposed by the completed excavations (cutting) shall be finished true to line and grade. Depressions shall be filled and compacted, and loose material shall be removed.

F. Temporary construction slopes shall not exceed requirements set forth in Cal-OSHA Industrial Safety Orders, or ratio suggested in the field by the Geotechnical Engineer.

G. It is the Contractor's responsibility to achieve the finished grades shown on the plan, and to determine the quantity of and provide for soil import or export required to achieve plan grades

H. Contractor to procure and refer to Geotechnical Investigation Report for further requirements.

3.3 FIELD QUALITY CONTROL

A. The Geotechnical Engineer will observe the excavation, soil removal, moisture-conditioning and recompaction operations. After the completion of these operations and before placement of fill, the Contractor shall obtain the Geotechnical Engineer's approval of the site preparation in each area.

3.4 DEWATERING

A. During excavation activities, groundwater may be encountered. The contractor is responsible for accounting in their bid the necessary equipment required to remove groundwater from excavations to allow for the proper placement of fill per the Geotechnical Report to be procured by Contractor.

B. Groundwater shall be discharged through a silt-sack type device at the outlet end of the discharge pipe to allow for filtration.

C. Silty water shall not be discharged to any storm drain.

3.5 PLACEMENT MOISTURE CONDITIONING AND COMPACTION

A. Exposed subgrade materials shall be ripped, moisture-conditioned, and compacted as noted in Paragraph 3.02B. above. Onsite fill materials to be used in exterior hardscape areas should subsequently be placed in loose, horizontal lifts of 8 inches thick or less, moisture-conditioned to within 2% of optimum moisture content or as directed in the field by the project Geotechnical Engineer, and uniformly compacted to at least 90% relative compaction. The upper 6” of subgrade in asphalt pavement areas shall be compacted to at least 95% relative compaction

B. All site preparation and fill placement should be observed by a representative of the Geotechnical Engineer.

C. Where field density tests indicate that required compaction and/or moisture content has not been attained, the fill shall be reconditioned as necessary and recompacted to the required density and/or moisture content prior to placing additional material. The Contractor shall be responsible for placing, moisture conditioning and compacting approved material in accordance with these specifications.

D. Sufficient testing and inspection should be performed to assure compliance with the recommended compaction standards. Samples of proposed native or imported fill should be submitted to the Geotechnical Engineer material testing laboratory for assessment at least 48 hours prior to placement or importing to the site (whichever is soonest).

3.6 FINISH

A. Fill slopes shall be compacted by slope rolling and trimming or shall be overfilled and trimmed back to planned grade. The completed fill shall be finished true to line and grade. Depressions shall be filled and compacted and all loose material shall be removed.

B. After completion of compaction and finish grading operations, fill slopes, horizontal surfaces disturbed by construction operations, and cut slopes shall be moisture conditioned and ‘trackwalked’ to provide a firm and uniformly roughened surface free of loose material.

C. See also requirements in landscape specifications for slope and landscaped area requirements.

3.7 CLEAN UP

A. Remove all debris and stains resulting from the work of this section, including any and all excess material, which shall be removed from the project site.

END OF SECTION

SECTION 312300

STRUCTURAL EXCAVATION AND FILL

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section Includes:
   1. Excavation for foundations and pits.
   2. Backfilling structural excavations as required.
   3. Fill over concrete mat foundations.

B. Related Sections:
   1. Concrete Forming and Accessories – Section 31000
   2. Earthwork – Section 312000

1.3 REFERENCES

A. ASTM: Standards of the American Society for Testing and Materials (ASTM) apply where cited in this Section.

B. American Concrete Institute (ACI):
   1. ACI 301 - Specifications for Structural Concrete for Buildings, 2010.
   2. ACI 229R – Controlled Low Strength Materials, 2013.

C. California Department of Transportation's (Caltrans):
   1. CSS - Standard Specifications, 2010.

1.4 SITE CONDITIONS

A. Notify Owner's Representative when site conditions differ from findings of Geotechnical Investigation Report, procured and provided by Contractor.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Concrete: Concrete materials and proportions shall be in accordance with ACI 301 to produce concrete with minimum compressive strength of 2500 psi at 28 days.

B. Structural Fill: CSS Section 26, Class 2 Aggregate Base rock, 3/4" size.

C. Controlled Low Strength Material: Machine mixed, self-compacting, low-strength fill consisting of fine aggregate, cementitious materials, entrained air and water. Mix and mixing shall conform to recommendations of ACI 229 to achieve the following properties:
   1. Slump: 8 to 10 inches.
   2. Compressive Strength:
      a. For backfill: Minimum 150 psi to maximum 300 psi at 30 days.
      b. For fill beneath footings: Minimum 300 psi at 30 days.

3. Fresh Density: 115 to 145 pounds per cubic.
4. Subsidence: Minimal; a maximum of 1/16” per foot of thickness.

D. Pea Gravel: ASTM C 33, Size No 7.
1. Fill material (over mat foundation): Crushed rock of uniform gradation, 100% passing 3/4 inch sieve.

PART 3 – EXECUTION

3.1 PREPARATION

A. Take measures to prevent surface water from entering excavations.

B. Notify Geotechnical Engineer at least 48 hours prior to commencing and upon completion of excavations.

3.2 EXCAVATION

A. Accurately cut foundation excavations to dimensions and elevations shown on Drawings to tolerances of ACI 301.

B. Where sides are unstable or excavations are not accurately cut, over-excavate to permit placement and removal of formwork.

C. Shore and brace excavations as required to prevent caving and danger to persons and structures. Comply with applicable safety regulations.

D. Prepare bottoms of footing excavations to produce conditions acceptable to Owner’s Representative, based on professional opinion of Geotechnical Engineer.
1. The bottoms of excavations shall be firm, undisturbed earth, clean and free from loose material, debris and foreign matter.
2. Remove or recompact disturbed material.
3. Remove soft or unstable material to a depth satisfactory to Geotechnical Engineer.
4. Fill over-depth excavations with concrete, flowable fill, or structural fill compacted to minimum 95% relative compaction.

E. Maintain footing conditions approved by Geotechnical Engineer until concrete work is complete.
1. In periods of wet weather, over-excavate footings and place 2-inches minimum concrete mud-slab as soon as practical after completing excavation.

F. Keep excavations free of water at all times until foundation concrete is cast.

G. Stockpile or remove excavated material from site in accordance with Division 31 Section “Earthwork”.

3.3 BACKFILLING

A. Place and compact fill in accordance with Section 312000, “Earthwork”.
1. Use pea gravel or controlled density material for backfill against sides of footings and pits, where adequate compaction of structural fill cannot be achieved.

B. Backfill footings after formwork is removed. Do not backfill pits until concrete has cured a minimum of 7 days.

3.4 FILL OVER CONCRETE MAT FOUNDATIONS

A. Preparation:
1. Verify piping is securely supported against vertical and lateral displacement.
2. Where area is not enclosed prior to placement of fill, make provision for removal of water.

B. Placement: Fill may be placed to the full specified thickness without compaction.
1. Pipes: Bed pipes in fill up to grade of underside of pipe, taking care not to place material atop pipe. Shovel slice material under and beside the pipe up to the spring line without moving the pipe.

C. Consolidation: Immediately prior to placement of vapor retarder, consolidate surface with a minimum of 3 passes of a vibratory plate. Achieve specified grade to plus 0 inch to minus 1-1/2 inch tolerance.

3.5 FIELD QUALITY CONTROL

A. The Geotechnical Engineer will observe footing excavations prior to placement of reinforcement; and again, immediately prior to casting of concrete.

B. The Geotechnical Engineer will observe the placement of fill and backfill material.

END OF SECTION

SECTION 312316

TRENCHING, BACKFILLING AND COMPACTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Locate and mark existing utilities within the limits of work.

B. Trenching and other excavation needed for the installation of pipe (storm drain, water, sanitary sewer and gas) and appurtenances.

C. Provide and install bedding material as specified for each type of utility.

D. Backfill and compact trenches and excavations with suitable material, as specified.

E. Provide and install subbedding material as required.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including the Division 01 Specification Sections apply to this Section.

B. Related Sections include the following:
1. Site Drainage – Section 334000
2. Water Utility Distribution Piping – Section 331100

1.3 SUBMITTALS

A. In accordance with, Administrative Requirements Specifications:
1. Sand equivalent and gradation analysis of bedding and backfill materials.

1.4 REFERENCES

A. Standard Specifications
1. Where referred to in these specifications, "Standard Specifications" shall mean the State of California Department of Transportation Standard Specifications, latest edition. All work shall be carried out in conformance with the Standard Specifications unless otherwise specified herein.

1.5 EXISTING SITE CONDITIONS

A. The Contractor shall have Underground Service Alert mark all existing public utilities as a first order of work. Additionally, the Contractor shall have a locating service mark all existing private utilities within the limits of work.

B. The Contractor shall pothole each existing utility that will be extended or reused at its point of cut and removal to confirm the actual locations and depths, as well as all proposed crossings as shown on the drawings. Notify Engineer of results via the RFI process.

C. Existing water, sewer, storm drain, gas, electrical, communication (data), etc. services and laterals to be abandoned or removed as indicated on the plans shall be provided with replacement facilities as to comply with construction sequencing requirements and limit utility/service outages as required by the Owner. See Mechanical, Electrical, and Civil plans for detailed removal/replacements requirements.

D. The Contractor shall acquaint himself with all site conditions. If unknown/unmarked active utilities are encountered during the work, the Engineer shall be promptly notified for instruction via the RFI process. Failure to notify will make the Contractor liable for damage to these utilities arising from Contractor's operations subsequent to his discovery of such unknown/unmarked utilities.

E. The Contractor shall review the Soils Investigation and plan their work accordingly.

1.6 QUALITY ASSURANCE

A. Testing Agency: The project Geotechnical Engineer representative (Inspector) shall verify the adequacy of sub-bedding conditions and monitor bedding, backfilling, and compaction operations. Geotechnical report to be procured and provided by Contractor.

B. Unsatisfactory Conditions: The Inspector will advise the Contractor immediately if unsatisfactory conditions or test results are observed. The area where compaction is unsatisfactory shall be reworked until the required density has been attained. The Inspector shall have the authority to reject structural bedding or backfill until unsuitable material has been replaced and/or rework, as needed, has taken place. It shall be the sole responsibility of the Contractor to achieve the specified degree of compaction.

1.7 PROTECTION FROM CAVING

A. Construction Safety Orders
1. Nothing in this section shall be deemed to allow the use of a shoring, sloping, or protective system less effective than that required by the Construction Safety Orders. The Contractor shall take all necessary measures to protect the workmen and adjacent areas and structures from the hazards of the trenching or excavation operations. Sheet piling and other sheeting shall be withdrawn in such a manner as to prevent caving at the walls of excavation or damage to piping or other structures. Except as may be hereinafter modified, no sheeting shall be left in the trench and no backfill shall be made against the sheeting before it is removed. Any sheeting extending below the invert of the pipe shall be left in place by cutting off in a manner satisfactory to the Inspector.

B. Liability
1. Nothing in this section shall be construed to impose tort liability on the Architect or the Design Engineer.

PART 2 - PRODUCTS

2.1 TRENCH STABILIZATION SUBBEDDING

A. Drain rock for trench stabilization subbedding shall be of the nominal sizes designated as 3/4" x 1/4".

2.2 BEDDING MATERIAL (STORM DRAIN, WATER AND SANITARY SEWER)

A. Bedding material shall be well graded sand free from vegetable matter and refuse.

B. The minimum sand equivalent value shall be 30.

C. The grading shall conform to the following:

Sieve	Percentage Passing	
	Minimum	Maximum
1"	100	100
3/4"	100	100
3/8"	100	100
No. 4	90	100
No. 200	0	5

2.3 BEDDING MATERIAL (GAS)

A. Bedding material for gas line installation shall be backfill sand meeting the requirements of the PG&E Green Book.

2.4 BACKFILL

A. In non-hardscape areas (as shown on the Increment 3 set of plans), backfill material may be native excavated material free of vegetable matter, refuse and other unsatisfactory material.

B. The backfill material shall be free of stone and lumps exceeding 4 inches in greatest dimension.

C. Backfill material shall have minimum Plastic Index (PI) value of 15. Liquid limit (LL) value shall be no more than 40.

D. Granular trench backfill material may be used in lieu of native material at the Contractor's option.

2.5 GRANULAR BACKFILL MATERIAL

A. Within paved and other hardscape areas, the upper 12” of backfill for trenches shall be Caltrans Class 2 aggregate base.

B. Granular backfill material, above bedding material, and below class 2 aggregate base, shall be gravel, sand or rock material free from deleterious materials, shall be used in hardscape areas.

C. Minimum sand equivalent value shall be 25.

D. Granular backfill material shall conform to the following:

Sieve Size	Percentage Passing
3"	100
3/4"	-
3/8"	-
No. 4	40 - 100
No. 30	10-100
No. 200	-

PART 3 - EXECUTION

3.1 EXCAVATION

A. The Contractor shall make all necessary excavations to construct the work shown on the Drawings, in accordance with trench detail appropriate to the utility being installed, and applicable local and/or County Standards.

B. The Contractor shall perform all excavations of every description and all substances encountered to the depth indicated on the drawings. During excavation, that material suitable for backfilling shall be deposited in an orderly manner, a sufficient distance from the banks for the trench to avoid overloading and to prevent slides or cave-ins. All excavated material not required or suitable for backfill shall be removed and properly disposed of offsite.

C. Excavation shall include the removal of all materials or surface obstructions of any nature that would interfere with the execution of the work, and such items shall be returned to their equivalent preconstruction condition after installation of utilities.

D. All trench excavation work shall conform to the Division of Industrial Safety Construction Safety Orders, which are currently in use.

3.2 TRENCH WIDTH AND DEPTH

A. The maximum allowable width of trench measured at the top of the pipe shall be the outside diameter of the pipe exclusive of bells and collars, plus twenty-four (24) inches, and such maximum width shall be inclusive of all trench sheeting. Minimum width of trench for pipes 18” diameter and less shall be pipe diameter plus 6”. Maximum width of trench for pipes 18” diameter and less shall be pipe diameter plus 9”. Minimum width of trench for pipes 18” diameter and greater shall be pipe diameter plus 9”. Maximum width of trench for pipes 18” diameter and greater shall be pipe diameter plus 12”. Whenever the maximum allowable trench width is exceeded for any reason, the Contractor shall, at his expense, embed or cradle the pipe in concrete in a manner satisfactory to the Engineer.

B. The trench shall be excavated to the dimensions and depth shown on the Drawings and in a manner, which will produce a firm foundation for supporting the entire length of each section of pipe. Bell holes shall be provided so that the load is carried on the pipe barrel.

C. Minimum cover for domestic and recycled/reclaimed water lines shall be 24”.

D. Minimum cover for fire water lines shall be 42”.

E. Minimum cover for gas lines shall be 30”.

3.3 CONTROL OF WATER

A. The Contractor, at his own expense, shall provide sufficient pumping equipment, and the operation thereof, to remove ground water from the excavation.

B. Water shall be disposed of in such a manner as to cause no injury to public or private property, nor be a menace to the public health. Discharges directly to storm drainage systems, ditches, and creeks shall not be allowed.

C. Dewatering shall be performed under a Contractor obtained permit from the local municipality/County (if discharge is to the sewer system) or the Regional Water Quality Control Board (if discharge is to the storm drain system) as applicable. The Contractor is advised that all of these agencies may require testing of the proposed dewatering discharge for contaminants. It shall be the sole responsibility of the Contractor to apply for and obtain the necessary permits, obtain and pay for any required water quality tests, design shoring and dewatering systems, and pay any fees associated with discharging the water to the sanitary sewer system if that option is selected. Permits must be obtained prior to any discharge occurring.

3.4 UNSUITABLE SUB-BEDDING

A. Where soft, wet, spongy, or unsuitable trench foundation is encountered, sub-bedding material shall be placed under the pipe to facilitate construction. The cost of furnishing and placing sub-bedding material shall be included in the price bid for the job.

3.5 BRACING EXCAVATIONS

A. Excavations shall be so braced and supported that they will be safe, and the ground alongside the excavation will not slide or settle, and all existing improvements of any kind, either on public or private property will be fully protected from damage.

B. If any damage does result to such improvements, the Contractor shall make the necessary repairs or reconstruction at his own expense.

3.6 PIPE BEDDING (STORM DRAIN, WATER AND SANITARY SEWER)

A. Bedding material shall be placed under the pipe before the pipe joints have been completed and inspected.

B. Bedding material shall be placed carefully around and under the pipe in horizontal layers 4 inches thick after compaction.

C. The bedding material shall be brought up uniformly on each side of the pipe.

D. Bedding material shall have the proper moisture content to assure maximum compaction by using hand or pneumatic tampers.

E. Bedding shall be accomplished in a manner which will not disturb the pipe but will secure a relative compaction of 90 percent.

F. Bedding shall be installed up to 4 inches below and 12” over the top of the pipe.

3.7 PIPE BEDDING (GAS)

A. Bedding material shall be placed under the pipe before the pipe joints have been completed and inspected.

B. Bedding material shall be placed carefully around and to the sides of the pipe in horizontal layers 4 inches thick after compaction.

C. No compaction is allowed directly above the pipe until there is at least 12” of cover.

D. The bedding material shall be brought up uniformly on each side of the pipe.

E. Bedding material shall have the proper moisture content to assure maximum compaction by using hand or pneumatic tampers.

F. Bedding shall be accomplished in a manner which will not disturb the pipe but will secure a relative compaction of 90 percent.

G. Bedding shall be installed at least 2 inches below and 12” over the top of the pipe.

3.8 TRENCH BACKFILL

A. Backfill material shall be placed after the pipe and bedding have been inspected by the Inspector. Native backfill may be used, at the contractor’s option, outside of exterior slab and pavement areas. All other areas shall use Caltrans Class 2 aggregate base in the upper 12 inches of the trench backfill. All trenches shall be backfilled to pavement or exterior slab structural section subgrade, or to finished grade in unpaved areas.

B. Backfill and compaction of utility trenches in and immediately adjacent to building pads, driveways, parking, and other flatwork areas should be such that no settlement will occur.

C. Where trenches closely parallel a footing and the trench bottom is within a 2 horizontal to 1 (one) vertical plane, projected outward and downward from any structural element, grout slurry should be utilized to backfill that portion of the trench below this plane. The use of slurry backfill is not required where a narrow trench crosses a footing at or near a right angle.

D. Granular Backfill (Non-native)
1. The backfill material shall be placed in layers not exceeding 6" in uncompacted thickness.
2. Compaction may be accomplished by adding sufficient water to the material as it is placed in the trench to achieve 90 percent relative compaction.
3. Supplemental compactive effort using vibratory means shall be employed if necessary to obtain specified degree of compaction.
4. Ponding or the use of excessive amounts of water will not be allowed.
5. Vibratory or other compaction equipment shall be used whenever necessary to obtain the required compaction, and must be used within 12 inches of pavement subgrade in paved areas, where compaction is required to be 95% R.C.

E. Native Backfill
1. Native backfill material shall be placed in layers not exceeding 6" in uncompacted thickness.
2. Compaction may be accomplished by adding sufficient water to the material as it is placed in the trench to achieve between 90 to 95 percent relative compaction.
3. Supplemental compactive effort using vibratory means shall be employed if necessary to obtain specified degree of compaction.
4. Ponding or the use of excessive amounts of water will not be allowed.
5. Vibratory or other compaction equipment shall be used whenever necessary to obtain the required compaction.

3.9 CLEAN UP

A. Remove all debris and stains resulting from the work of this section.

END OF SECTION

SECTION 31 25 14.13

HYDROSEED

GENERAL

1.01 SUMMARY

A. This section specifies the hydraulically-applied erosion control product category of High Performance-Flexible Growth Medium (HP-FGM). The HP-FGM shall be is a biodegradable, High Performance-Flexible Growth Medium (HP-FGM) composed of 100% recycled, thermally refined virgin wood fibers, crimped biodegradable interlocking fibers derived from regenerated cellulose sourced from sustainably harvested wood, micro-pore granules, naturally derived cross-linked biopolymers and water absorbents. The HP-FGM is patented, made in the US, plastic-free, and phytosanitized to eliminate potential weed seeds and pathogens. The product requires no curing period and upon application forms an intimate bond with the soil surface to create a continuous, porous, absorbent and flexible erosion resistant blanket that allows for rapid germination and accelerated plant growth.

B. Related Sections: Other Specification Sections, which directly relate to the work of this Section include, but are not limited to the following:

    1. Section 312000 – Earthworks

1.02 SUBMITTALS

A. Product Data: Submit manufacturer’s product data and installation instructions. Include required substrate preparation, list of materials and application rate.

B. Certifications: Manufacturer shall submit a letter of certification that the product meets or exceeds all technical and packaging requirements and is made in the U.S.A.

1.03 DELIVERY, STORAGE AND HANDLING

A. Deliver materials and products in UV and weather-resistant factory labeled packages. Store and handle in strict compliance with manufacturer’s instructions and recommendations. Protect from damage, weather, excessive temperatures and construction operations.

PRODUCTS

2.01 MATERIALS

A. The HP-FGM shall conform to the following typical property values when uniformly applied at a rate of 3,500 pounds per acre (3,900 kilograms/hectare) under laboratory conditions.

Property	Test Method	Tested Value (English)	Tested Value (SI)
Physical			
Mass/Unit Area	ASTM D6566	≥11.6 oz/yd^2	≥390 g/m^2
Thickness	ASTM D6525[1]	≥ 0.22 inch	≥ 5.6 mm
Ground Cover	ASTM D6567[1]	≥ 99%	≥ 99%
Water Holding	ASTM D7367	≥ 1,700%	≥ 1,700%
Material Color	Observed	Green	Green
Performance			
Cover Factor[2]	ASTM D8298-	≤ 0.01	≤ 0.01
% Effectiveness[3]	ASTM D8298-	≥ 99%	≥ 99%
Vegetation	ASTM D7322[1]	≥ 800%	≥ 800%
Functional Longevity[4]	ASTM D5338	≤ 18 months	≤ 18 months
Cure Time	Observed	0 - 2 hours	0 - 2 hours
Environmental			
Ecotoxicity[5]	EPA 2021.0	Non-Toxic	Non-Toxic
Biodegradability	ASTM D5338	Yes	Yes
Certified BioPreferred® Biobased Content	ASTM D6866	100%	100%
Elemental Impurity	ASTM D8082	Pass	Pass
Carbon Footprint[6]	Life Cycle Assessment	≤0.4 Unit CO_2e/ Unit of product[7]	≤0.4 Unit CO_2e/ Unit of product[7]

1. ASTM test methods developed for Rolled Erosion Control Products and have been modified to accommodate Hydraulically-Applied Erosion Control Products.
2. Cover Factor is calculated as soil loss ratio of treated surface versus an untreated control surface.
3. % Effectiveness = One minus Cover Factor multiplied by 100%.
4. Large scale testing conducted at Utah Water Research Laboratory. For specific testing information please contact a Manufacturer representative.
5. Functional Longevity is estimated time period, based upon ASTM D5338 testing and field observations, that a material can be anticipated to provide erosion control and agronomic benefits as influenced by composition, as well as site-specific conditions, including; but not limited to – temperature, moisture, light conditions, soils, biological activity, vegetative establishment and other environmental factors.
6. Cradle to factory gate (Conover, NC) life cycle assessment.
7. "Carbon dioxide equivalent" or CO_2e is a term for describing different greenhouse gases in a common unit. For any quantity and type of greenhouse gas, CO_2e signifies the amount of CO_2 which would have the equivalent global warming impact. The unit of CO_2e per unit of product is a consistent ratio based on mass, regardless of what unit of mass is chosen. For instance, there is 0.4 kg of CO_2e per kg of product or 0.4 oz CO_2e per oz of product.

2.02 COMPOSITION

A. All components of the HP-FGM shall be pre-packaged by the Manufacturer to assure both material performance and compliance with the following values. Under no circumstances shall field mixing of components be permitted. No chemical additives with the exception of fertilizer, soil neutralizers and biostimulant materials should be added to this product.

1. Thermally Processed* (within a pressurized vessel) Virgin Wood Fibers – 80%
   *Heated to a temperature greater than 380 degrees Fahrenheit (193 degrees Celsius) for 5 minutes at a pressure greater than 50 psi (345 kPa)
2. Wetting agents (including high-viscosity colloidal polysaccharides, cross-linked biopolymers, and water absorbents) – 10%
3. Crimped Biodegradable Interlocking Fibers derived from regenerated plant sources – 5%
4. Micro-Pore Granules – 5%

2.03 PACKAGING

A. Bags: Net Weight – 50 lb (22.7 kg), UV and weather-resistant plastic film
Pallets: Weather-proof, stretch-wrapped with UV resistant pallet cover
Pallet Quantity: 40 bags/pallet or 1 ton (909 kg)/pallet

2.04 SEED

A. Refer to Plans for seed mix and quantities.

EXECUTION

3.01 SOIL TESTING

A. Soil Samples shall be taken and sent to a third-party, independent lab for analysis and in compliance with Chemical Sampling and Analysis of Soils Sections, if applicable.

B. The tests shall include analysis and interpretation of results.

C. The soil testing methods used shall be compliant with recognized agronomic testing standards, as outlined in specification sections for revegetation of disturbed sites.

D. Soil Analysis shall include results for:

1. Soil pH
2. Soluble Salts
3. Excess Carbonate
4. Organic Matter
5. Nutrient readings for:
   i. Nitrogen, Phosphorus, Potassium
   ii. Magnesium, Calcium, Sodium, Manganese, Sulfur, Zinc, Copper, Iron, Boron
6. Cation Exchange Capacity
7. Percent Base Saturation Sodium

E. Any soil amendments or soil neutralizers shall be specified according to Section 32 01 90.16 – Amending Soils and applied with the hydroseeding slurry at Manufacturer recommended rates based on soil test results.

3.03 SUBSTRATE AND SEEDBED PREPARATION

A. Examine substrates and conditions where materials will be applied. Apply products to geotechnically stable slopes that have been designed and constructed to divert runoff away from the face of the slope. Do not proceed with installation until satisfactory conditions are established.

B. Depending upon project sequencing and intended application, prepare seedbed in compliance with other specifications under Section 1.01 B

3.04 INSTALLATION

A. Strictly comply with equipment manufacturer's installation instructions and recommendations. Use approved hydroseeding machines with fan-type nozzle (50-degree tip). To achieve optimum soil surface coverage, apply HP-FGM from opposing directions to soil surface. Rough surfaces (rocky terrain, cat tracked and ripped soils) may require higher application rates to achieve 100% cover. Slope interruption devices or water diversion techniques are recommended when slope lengths (3H:1V) exceed 100 feet (30 m). Slope interruption intervals may need to be decreased based on steeper slopes or other site conditions. HP-FGM is not recommended for channels or areas with concentrated water flow unless used in conjunction with a rolled erosion control product designed to accommodate the anticipated hydraulic conditions. Unless approved by the Manufacturer, no chemical additives with the exception of fertilizer, soil neutralizers and biostimulant materials should be added to this product.

B. For Erosion Control and Revegetation: To ensure proper application rates, measure and stake area. For maximum performance, apply HP-FGM in a two-step process*:

    1. Step One: Apply fertilizer with specified prescriptive agronomic formulations and typically 50% of specified seed mix with a small amount of HP-FGM for visual metering. Do not leave seeded surfaces unprotected, especially if precipitation is imminent.
    2. Step Two: Mix balance of seed and apply HP-FGM at a rate of 50 lb per 125 gallons (22.7 kg/475 liters) of water over freshly seeded surfaces. Confirm loading rates with equipment manufacturer.

    *Depending upon site conditions HP-FGM may be applied in a one-step process where all components may be mixed together in single tank loads. Consult with Manufacturer for further details.

    Best results and more rapid curing are achieved at temperatures exceeding 60°F (15°C). Curing times may be accelerated in high temperature, low humidity conditions with product applied on dry soils.

C. Mixing: A mechanically agitated hydroseeding machine is strongly recommended:

    1. Fill 1/3 of mechanically agitated hydroseeder with water. Turn pump on for 15 seconds and purge and pre-wet lines. Turn pump off.
    2. Turn agitator on and load low density materials first (i.e. seed).
    3. Continue slowly filling tank with water while loading fiber matrix into tank.

4. Consult application and loading charts to determine number of bags to be added for desired area and application rate. Mix at a rate of 50 lb of HP-FGM per 125 gallons (22.7 kg/475 liters).
5. All HP-FGM should be completely loaded before water level reaches 75% of the top of tank.
6. Top off with water and mix until all fiber is fully broken apart and hydrated (minimum of 10 minutes — increase mixing time when applying in cold conditions). This is very important to fully activate the bonding additives and to obtain proper viscosity.
7. Add fertilizer and any other remaining amendments.
8. Shut off recirculation valve to minimize potential for air entrainment within the slurry.
9. Slow down agitator and start applying with a 50-degree fan tip nozzle.
10. Spray in opposing directions for maximum soil coverage.

D. Application Rates: These application rates are for standard conditions. Application rates may need to be increased to accommodate rough surfaces.

Slope Gradient / Condition	English	SI
≤ 4H to 1V	2,500 lb/ac	2,800 kg/ha
> 4H to 1V and ≤ 3H to 1V	3,000 lb/ac	3,400 kg/ha
> 3H to 1V and ≤ 2H to 1V	3,500 lb/ac	3,900 kg/h
> 2H to 1V and ≤ 1H to 1V	4,000 lb/ac	4,500 kg/ha
> 1H to 1V	4,500 lb/ac	5,100 kg/ha
Below ECB or TRM	1,500 lb/ac	1,700 kg/ha
As infill for TRM*	3,500 lb/ac	3,900 kg/ha

*Use only approved and tested Turf Reinforcement Mats (TRMs) to infill with the HP-FGM

For additional details including mixing ratios/loading rates for specific machine sizes and visual keys for proper application, please consult the Manufacturer's Application Guide for High Performance – Flexible Growth Medium.

3.05 CLEANING AND PROTECTION

A. Always flush residual slurry from hydraulic seeding/mulching equipment immediately following each application, at the end of each work period or when equipment will be left unattended. Compounds containing residual Urea, Nitrogen, Phosphorus, Potassium and other substances may form and can be hazardous to human health and equipment.

B. Clean spills promptly. Advise owner of methods for protection of treated areas. Do not allow treated areas to be trafficked or subjected to grazing.

3.06 INSPECTION AND MAINTENANCE

A. All inspections and maintenance recommendations shall be conducted by qualified professionals consistent with the owner, engineer/specifier and regulatory entity(s) expectations.

B. Initial inspections shall insure installations are in accordance with the project plans and specifications with material quantities and activities fully documented.

C. Subsequent inspections shall be conducted at pre-determined time intervals and corrective maintenance activities directed after each significant precipitation or other potentially damaging weather or site event.

END OF SECTION

SECTION 32 01 90.13
EXTERIOR IMPROVEMENTS & LANDSCAPE MAINTENANCE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to this section.

1.2 SUMMARY

A. This Section includes requirements for:

1. Watering trees and grass.
2. Monitoring adjustment and minor repair of the landscape irrigation system.
3. Mowing, edging and trimming of lawn areas.
4. Monitoring, fertilizing, weeding, and cultivating the lawn areas.
5. Pruning and trimming of plant material.
6. Weed, cultivating and cleaning of planting beds.
7. Application of fertilizers, insecticides, and herbicides.
8. General site clean-up; removal of trash and products of maintenance.
9. Replacement of trees, shrubs, groundcovers, sod and hydromulch.
10. Sediment removal from irrigation, storm and drainage events.
11. Extra services as needed - see Section 1.4 EXTRA SERVICES of this specification.

B. Related Sections:

1. Section 32 84 00, “Planting Irrigation.”
2. Section 02905, “Landscape Installation”

1.3 DEFINITIONS

A. Backfill: The earth used to replace or the act of replacing earth in an excavation.

B. Finish Grade: Elevation of finished surface of planting soil.

C. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

D. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.

E. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing planting soil.

F. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

1.4 EXTRA SERVICES

A. All services not covered under this contract shall be considered “extra services” and will be charged for separately according to the nature of the item of work. The consent and authorization of the Owner or their authorized representative must be obtained prior to the performance or installation of such “extra services” items and prior to purchase of any chargeable materials.

B. Plant replacement caused by conditions beyond the contractor’s control. See Section 1.7 NEGLECT AND VANDALISM of this specification.

1.5 MAINTENANCE REQUIREMENTS

A. Maintenance period shall begin upon inspection and approval at Substantial Completion and shall be for ninety (90) days. Maintenance frequency shall be weekly throughout the maintenance period.

B. Irrigation System: Maintenance of the irrigation system shall consist of monitoring and adjustment of the duration and frequency of the watering schedule, adjustment of heads, emitters, and dripline for coverage and elevation, removal of debris from heads and drip filters, repair of leaks in both mains and lateral lines and all other work required to establish a complete working sprinkler irrigation system.

C. Trees, Shrubs, Groundcovers and Vines: Maintenance of new planting shall consist of watering, cultivating, weeding, mulching, re-staking, tightening and repairing of guys, resetting plants to proper grades or upright positions, restoration of the planting basins, and furnishing and applying such sprays and invigorants as are necessary to keep the plants free of insects and disease and in thriving condition.

D. Lawns: Maintenance of new lawns shall consist of mowing, edging, raking, watering, weeding, fertilizing, and repair of all erosion, reseeding and resodding as necessary, to establish a uniform stand of the specified grasses.

1.6 PROTECTION

A. Protect planting areas and lawns at all times against damage of all kinds for duration of maintenance period. Maintenance includes temporary protection fences, barriers, and signs as required for protection. If any plants become damaged or injured, because sufficient protection was not provided, treat or replace as directed by the Owner's Representative at no additional cost to Owner.

1.7 NEGLECT AND VANDALISM

A. Turf, shrubs, trees or plants that are damaged or killed due to Contractor's operations, negligence or chemicals shall be replaced at no expense to the Owner. If plant damage or death is caused by conditions beyond the Contractor's control, replacement shall be at the Owner's expense.

B. Sprinklers, drip irrigation components or structures that are damaged due to the Contractor's operations must be replaced by the Contractor promptly. Likewise, damage to the irrigation system by others shall be corrected immediately by the Contractor, at the Owner's expense.

C. All man-made water damage, resulting from Contractor's neglect shall be corrected at Contractor's expense.

D. All damage to or thefts of landscaping and irrigation installations not caused or allowed by the Contractor shall be corrected by the Contractor at the Owner's expense upon receipt of written authorization to proceed.

1.8 EMERGENCIES

A. Answer emergency or complaint calls regarding conditions in landscaped areas regarding fallen trees or branches or shrubs or trees that obstruct the trail or other pavement within one (1) hour and correct the problem or place warning signs and advise the Owner of the need for major work to be performed withing four (4) hours of the initial contract.

B. Answer emergency calls regarding the landscape irrigation system failure or need of repair.

1.9 FINAL ACCEPTANCE

A. Work under this section will be accepted by Owner's representative upon satisfactory completion of all work, including maintenance, but exclusive of the required guaranteed irrigation obligations, replacement of plant materials and lawns under the Warranty Period. Upon Final Acceptance, the Owner shall assume responsibility for maintenance of the work.

B. The Contractor shall be responsible to contact the Owner's Representative ten (10) business days prior to end of 90-Day Maintenance Period to schedule Final Acceptance inspection.

PART 2 - PRODUCTS

2.1 MATERIALS

1. Fertilizers, soil amendments, equipment, or other materials required for installed items shall match those already in use.

2. Sample of all materials not specified under other Sections of these Specifications shall be submitted for review by Owner's representative prior to use.

PART 3 - EXECUTION

3.1 REQUIRED EQUIPMENT

A. Employ the necessary maintenance equipment.

3.2 WATERING

A. It shall be the responsibility of the Contractor to assure that the correct watering of plant materials is being accomplished during plant establishment period through the following irrigation services:

1. Regular deep watering to all new trees until there are definite signs that the trees have established themselves and new growth is apparent. Deep watering shall be accomplished by automatic controller scheduling, hand watering with hoses or water truck equipment. When hand watering, a water wand shall be used to break the water force.

2. Frequent watering to the lawn areas to insure against drying. This may be accomplished by automatic controller scheduling or hand watering.

3.3 LANDSCAPE IRRIGATION SYSTEM

A. Monitor and program the automatic controlling devices to provide optimum moisture levels in all planted areas.

1. Irrigation cycles shall be set to take place prior to sunrise (usually 4:00-5:00 am) unless otherwise instructed by the Owner in writing, except during visits of grounds maintenance personnel; during such visits the irrigation system may be operated as desired by those personnel.

2. If there is more than one irrigation controller, program to water per design parameters found in Contract Documents. During periods of high rainfall, set rain sensors to turn off irrigation programs until irrigation is needed. Do not switch controller to “off”, as this will stop the controller.

3. Complete irrigation system servicing shall be performed as required to maintain irrigation in correct operating condition, including all required labor. Operation of irrigation systems shall be monitored on a monthly basis to assure proper coverage and operation. Contractor shall provide a written report to Owner within five (5) business days after each monitoring service is complete including observation of performance, modifications to schedules, repairs and adjustments.

4. Adjust irrigation to avoid water damage to windows, buildings, fences, and walls. Make repairs and alterations to the irrigation system and water lines as needed. All irrigation repairs such as cleaning heads and filters or breaks caused by the Contractor shall be the Contractor’s responsibility.

5. Perform minor additions, subtractions and/or adjustments to irrigation equipment (i.e., addition of sprinkler heads or emitters, riser extensions, etc.) as may be required in order to conform to the irrigation requirements herein specified. Such additions, subtractions and/or realignments to irrigation system equipment shall not materially reduce the extent or value of the irrigation system equipment, and shall be accomplished after securing approval of the Owner.

6. Supplemental irrigation beyond tat which can be provided by the irrigation system shall be provided by the grounds maintenance firm as required in order to assure optimum moisture levels.

7. Sediment removal from project site as a result of erosion due to over irrigation or broken pipes.

3.4 MAINTENANCE OF TURF AREAS

A. Mowing lawn/grass areas shall be accomplished with sharp, properly adjusted mowers of the correct size for the various areas.

B. Mowing frequency shall be as per the Maintenance Frequency Schedule per Section 3.6 MAINTENANCE FREQUENCY SCHEDULE of this specification.

C. Blade heights shall be set according to the following schedule: two (2) inches – initial mowing and two and one half (2-1/2) inches April – November.

D. In the event of a prolonged rainy period and a surge in leaf growth is anticipated, the mower height may be re-adjusted to prevent "scalping" or "skinning" of lawn on preceding cuts.

E. Lawn shall be edged evenly at all walks, headers and other structures as per Maintenance Frequency Schedule per Section 3.6 MAINTENANCE FREQUENCY SCHEDULE of this specification.

F. After seed germinates or after sod is established, approximately four (4) to six (6) weeks after installation, apply a high-quality turf fertilizer that is predominately nitrogen to the lawn areas.

G. Until the establishment of the turf, the Contractor will be responsible for replacing soils that have eroded onto the paved areas. Residual soils on paving will be removed and if not mingled with objectional materials, may be re-used in eroded areas.

H. Immediately upon observing any lawn grass spreading into shrub or groundcover areas, the Contractor shall initiate a program of mechanical removal and maintain this program throughout the maintenance period.

I. Any lawn grass appearing in paved areas shall receive an application of soil sterilant according to manufacturer's direction. The sterilant shall be approved and will not be detrimental structurally to paved areas.

J. Removal of debris from the site unrelated to horticultural maintenance (paper, bottles, cans, etc.) shall be the responsibility of the maintenance Contractor and limited to areas designated by the project's limit of work. Exceptions for debris removal shall be per written direction of Owner.

3.5 MAINTENANCE OF TREES, SHRUBS AND GROUNDCOVERS

A. Contractor shall adjust and tighten as required all tree staking and guying to maintain support and prevent bark wounds due to rubbing. Guying shall remain in place through the one (1) year guarantee period. Removal as directed by Owner's Representative.

B. Contractor shall deep water all new trees until there are definite signs the trees have established themselves and are pushing out new growth.

C. Watering basins shall be removed by contractor after the trees have established themselves or as directed by Owner's Representative. Basins are normally removed one year from time of planting.

D. Contractor shall perform pruning work in accordance with standard horticultural pruning practices. Remove from the project all pruned branches and material. Remove and replace plant material excessively pruned or malformed resulting from improper pruning practices at no additional cost to the Owner.

1. Prune trees to select and develop permanent scaffold branches; to eliminate narrow V-shaped branch forks that lack strength, to reduce toppling and wind damage by thinning out crowns, to maintain a natural appearance and to balance crown with roots. Prune only as directed by the Owner's Representative.

2. Prune shrubs to develop natural form of plant. Shrubs shall not be clipped into balled boxed forms unless such is specified by the Contract Documents. Pruning cuts shall be made to lateral branches, buds or flush with the trunk. "Stubbing" and "heading" shall not be permitted.

E. Contractor shall be continuously alert for signs of insect presence or damage or the presence or damage from plant fungi. Upon locating such evidence, the Contractor shall report it to the Owner's Representative and take action as directed.

3.6 MAINTENANCE FREQUENCY SCHEDULE

A. Mowing, edging, trimming, litter clean-up, weeding, and watering monitoring: four visits per month for ninety (90) days.

B. Top-dress fertilizer: thirty (30) days after seeding and/or sodding.

C. Mulching, weeding, weed control and guying adjustment: as required each visit.

D. Reseeding: as required upon notice.

E. Tree and plant replacement: as required each visit.

F. Trash and debris removal: collect all trash and debris at each visit and dispose of off-site.

END OF SECTION 320090.13

SECTION 321216
ASPHALT PAVING AND BASE

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Provide, spread, and compact aggregate base as shown on the Contract Documents and as specified herein.

B. Provide, spread, and compact asphaltic concrete pavement.

C. Adjust to finish grade: any, and all, new or existing utility cleanouts, drainage structures, valve boxes, etc., which are included in the limits of work.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including the Division 01 Specification Sections apply to this Section.

B. Related Sections includes, but are not limited to the following:
   1. Earthwork - Section 312000
   2. Trenching, Backfilling and Compaction - Section 312316
   3. Concrete Sidewalk and Curbs - Section 321600

1.3 REFERENCES

A. Reference Data:
   1. If the year of the adoption or latest revision is omitted from the designation, it shall mean the specification, manual or test designation in effect the date the Notice to Proceed with the Work is given.

B. Caltrans Standard Specifications.

1.4 QUALITY ASSURANCE

A. Testing and inspection of the aggregate base, aggregate subbase and asphaltic concrete shall be done by a testing laboratory retained and paid for by the Owner. Any areas receiving failing tests shall be reworked by the Contractor to achieve the minimum specified degree of compaction. It shall be the sole responsibility of the Contractor to achieve satisfactory results.

B. Test Methods: Unless otherwise indicated, tests shall be made in conformance with the following standard methods:
   1. Relative compaction shall be determined by Test Method No. California 216 and 231.
   2. Caltrans Standards and Specifications, most recent edition.

1.5 SUBMITTALS

A. Submit certificate of compliance for aggregate base.

B. Submit gradation and strength analysis of any recycled Class 2 aggregate base.

C. Submit asphalt mix design parameters and certificates of compliance.

D. Submittals shall conform to the requirements of Section 01300.

PART 2 - PRODUCTS

2.1 AGGREGATE BASE

A. Aggregate for aggregate bases shall be clean and free of vegetable matter and other deleterious substances.

B. Aggregate base shall be of such a nature that it can be compacted readily under watering and rolling to form a firm, stable base.

C. Aggregate base shall be Class 2, and the combined aggregate shall conform to the 3/4 inch maximum grading specified in Section 26-1.02A "Class 2 Aggregate Base" of the Caltrans Standard Specifications.

D. Recycled Class 2 Aggregate base materials meeting the gradation and strength requirements of virgin material is acceptable for use in hardscape areas only (non-building areas).

2.2 ASPHALT CONCRETE

A. The asphalt concrete areas shall be Type A, ½ inch and shall conform to the applicable portions of Section 39 of the Caltrans Standard Specifications.

PART 3 - Execution

3.1 SUBGRADE PREPARATION FOR BASE MATERIAL

A. Subgrade preparation shall conform to the requirements in Section 312000 - Earthwork, and shall not vary more than 0.05 foot above, or 0.05 foot below the grade established by the Plans.

B. Prepared subgrade shall be inspected by the independent testing laboratory retained by the District prior to the placement of any aggregate base.

C. As per Section 312000 - Earthwork.

3.2 SPREADING

A. Aggregate base shall be delivered to the roadbed as uniform mixtures and shall be graded in layers or windrows. Segregation shall be avoided and the base/subbase shall be free from pockets of coarse or fine material.

B. The aggregate base, after spreading as above specified, shall be shaped to such thickness that after watering and compacting the completed base will conform to the required grade and cross section, within the tolerances specified in Section 26-1.05 "Compacting" of the Caltrans Specifications.

C. The base shall be spread, watered and compacted in layers not to exceed 6 inches in compacted thickness to achieve the specified thickness.

3.3 COMPACTION AND TOLERANCE

A. The relative compaction of the base shall not be less than 95 percent.

B. The finished surface of the aggregate base shall not vary more than 0.05 foot from the design grades.

C. Aggregate base which fails to meet the specified tolerances shall be reshaped, dewatered, and recompacted at the Contractor's expense.

3.4 SUBGRADE PREPARATION FOR ASPHALT CONCRETE

A. All construction beneath the subgrade shall be completed, including pipeline testing, prior to asphalt

concrete placement.

B. Subgrade shall not vary more than 0.05 foot above or below design grade.

C. Any soft spots in the subgrade shall be repaired by the Contractor, regardless of cause, prior to paving.

D. Minimum Class 2 aggregate base material under private walkways as shown on the Drawings shall be 6” in compacted thickness, unless otherwise noted.

3.5 TACK COAT

A. Apply tack coat of RS-1 or CRS1 Emulsion to vertical surfaces of existing surfacing that will come into con- tact with asphalt concrete.

3.6 SPREADING AND COMPACTING ASPHALT CONCRETE

A. Shall be in accordance with Section 39 of the Caltrans Standard Specifications.

3.7 STRUCTURE ADJUSTMENT

A. The Contractor shall mark the location of all structures to be adjusted to grade and shall be responsible for their location after paving operations are completed.

B. After surfacing or resurfacing is completed, the Contractor shall construct or reconstruct the structures to grade as shown on the plans.

3.8 FLOW TEST

A. Finished pavement areas shall be flow tested in the presence of the Inspector of record to confirm that positive gradients, that facilitate proper and complete surface drainage, have been achieved in all paved areas.

B. Any areas that fail the flow test, defined as any area where depth of ponding water exceeds 1/8 inch or where the surface of a ponding area exceeds 10 square feet, shall be repaved to achieve positive drainage.

3.9 CLEAN UP

A. Remove all debris and stains resulting from the work of this section.

END OF SECTION

SECTION 321223
PAVEMENT MARKINGS AND SIGNS

PART 1 - GENERAL

1.1 Section Includes

A. Furnish materials and install painted parking stalls, pavement markings, crosswalk striping.

B. Furnish and paint curbs.

C. Furnish materials and install signs and posts.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Related Sections include the following:
   1. Asphalt Concrete Paving and Base – Section 321216
   2. Concrete Sidewalk and Curbs – Section 321600

1.3 SUBMITTALS

A. In accordance with Section 01300, Administrative Requirements:
   1. Paint product data.
   2. Sign product data.

1.4 REFERENCES

A. California Manual of Uniform Traffic Control Devices (MUTCD), latest edition.

B. California Code of Regulations, Title 24, Part 2 – California Building Code (CBC), latest edition.

C. American with Disabilities Act (ADA), latest edition.

D. California Standard Specifications Section 82 Signs and Markers, latest edition.

PART 2 - PRODUCTS

2.1 STRIPING PAINT

A. The paint to be used on striping shall be commercial quality thermoplastic paint and be applied in two coats to achieve the designed coverage. Thinner shall not be mixed with paint.

B. White paint shall be used on all parking stall, pavement markings and crosswalk striping.

C. Blue paint shall be used on ADA parking stalls where indicated on the details.

D. Red paint shall be used on curbs where indicated on the drawings.

E. Refer to Architectural drawings for color(s) of playground striping.

2.2 SIGNS

A. Accessible signs shall also comply with the applicable sections of California Title 24 regulations and the ADA.

B. Signs shall be mounted at standard heights on 2” diameter steel posts set in concrete as detailed on the plans. Signs in drivable areas shall be mounted with breakaway hardware.

PART 3 - EXECUTION

3.1 STRIPING

A. No striping shall be started until all paving work on the entire job has been completed, and the various finished surfaces are sufficiently cured to prevent undue tracking onto new striping.

B. All stripes for parking spaces shall have a width of four inches. All widths shall be within 1/4-inch of the specified widths.

C. All lines and other shapes shall be clean and sharp as to dimensions and shall be painted in the locations shows on the plans. Ragged ends of segments, fogginess along the sides, or objectionable dribbling along the unpainted portions of the stripe shall not be permitted.

D. The finished product shall have an opaque, well painted appearance with no black or other discolorations showing through. Any smears shall be painted out with black paint to the satisfaction of the Owner's Representative.

E. The Contractor shall take all reasonable precautions to protect the paint during drying time and may be required to paint out all objectionable tracking. Appropriate traffic control necessary to insure non-tracking as well as reasonable traffic flows shall be the Contractor’s responsibility.

F. Painted stripes shall receive two coats of paint to achieve the desired coverage.

G. No work shall be done when the pavement is appreciably damp.

3.2 SIGNS

A. Signs shall be installed in the locations shown on the plans and in accordance with the referenced standards for height, setbacks, and embedment.

B. Signs for disabled accessibility shall be installed in accordance with the requirements of the California Building Code.

3.3 CLEAN UP

A. Remove all debris and stains resulting from the work of this section.

END OF SECTION

SECTION 321541.10

PERMEABLE DECOMPOSED GRANITE PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:
   1. Permeable Decomposed Granite (DG) Paving

B. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to Work of this Section.

C. Work included: All service, labor, materials, transportation and equipment necessary to perform the Work indicated on the Drawings and as specified.

1.2 SYSTEM DESCRIPTION

A. Decomposed Granite paving locations are per plan.

B. Compacted base depth to be per geotechnical recommendation, unless otherwise indicated. Geotechnical report with recommendation to be procured and provided by Contractor.

1.3 SUBMITTALS

A. Comply with specified Administrative Requirements, unless otherwise indicated.

B. Submit product data and manufacturer's instructions for:

   1. Decomposed granite
   2. Metal header
   3. Geotextile fabric

C. Samples:

   1. Contractor shall provide a material sample consisting of 1/2 pint container of decomposed granite (DG) to the Owner's representative for approval prior to

installation.

1.4 QUALITY ASSURANCE/FIELD QUALITY CONTROL

A. Installer qualifications: Installer to provide evidence to indicate successful commercial installations of decomposed granite surfacing, contact manufacturer for certified installers. If product is installed by a non-certified installer, Contractor to coordinate review of installation process by Owner's Representative. Failure to coordinate this oversight will void the manufacturer warranty. If the warranty is voided by the manufacturer due to lack of Contractor coordination, the Contractor will repair or replace unsatisfactory product at his or her own expense.

1.5 MOCK UP

A. Construct a 2 SF mock-up of the aggregate paving, including edging material and base course, at an owner-approved location, 5 days prior to installation. If approved, this mock-up will be the basis to demonstrate color, texture and standard of workmanship for the remainder of the project.

B. Notify the Owner's Representative 3 days prior to placing mock up.

C. Obtain approval of the mock-up prior to completing aggregate paving, the mock-up may remain as part of the project.

1.6 GENERAL REQUIREMENTS

A. Contractor shall be responsible for damages caused by his operations.

B. Metal Header and geotextile fabric shall be in place before installation of DG.

1. Scaled dimensions are approximate. Before proceeding with any work, the Contractor shall carefully check and verify all dimensions.

2. Contractor shall acquaint himself with all site conditions prior to submitting bid proposal.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Packing and Shipping: Deliver products in original unopened packaging

with legible manufacturer’s identification.

B. Storage and Protection: Comply with manufacturer's recommendations.

C. Store in a cool, dry place out of direct sunlight.

D. Protect from damage by the elements and construction procedures.

E. Store at temperature above 40 degrees F.

1.8 FIELD CONDITIONS

A. Do not install crushed aggregate when sub-base is wet at saturated field capacity.

B. Do not install crushed aggregate materials during rainy conditions or below 40 degrees Fahrenheit.

1.9 MAINTENANCE

A. The Maintenance Period begins on the day the Owner’s Representative has given notice of substantial completion and shall continue thereafter for no less than ninety (90) continuous calendar days

B. The Contractor shall continuously maintain and repair all involved areas of the Contract during the progress of the work an during the Maintenance Period until the Final Acceptance of the work.

C. The Contract completion date of the Maintenance Period will be extended, when in the opinion of the Owner’s Representative, improper maintenance is evident at the termination of the scheduled Maintenance Period. The Contractor shall be responsible for additional maintenance of the work at no charge in Contract price until all of the work is completed and acceptable.

D. The contractor shall be responsible for maintaining adequate protection of the areas. Damaged areas shall be repaired immediately at the Contractor's expense.

E. The Contractor shall physically remove any and all weed growth and roots from Decomposed Granite areas.

1.10 WARRANTY

A. Contractor shall provide warranty for performance of product. Contractor shall warranty installation of product for the time of one year from completion.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Decomposed granite:

1. Description: Shall be 3/8-inch maximum gradation, produced from naturally friable rock/granite with enough fines to produce a smooth walking surface. Materials should be free from clay lumps, organic matter and deleterious material. Blends of coarse sand and rock duct are not acceptable. Color to be natural sand/golden.

2. Use a single supply source for the entire quantity required.

3. Gradation:

Sieve Sizes	% Passing
3/8”	100
#4	85-100
#8	70-80
#16	50-65
#30	40-50
#50	25-35
#100	15-25
#200	10-15

C. Metal header:

1. Description: 3/16” thick by 5” deep heavy-duty steel edging with (7) 16-inch long stakes per 16’ section.

2. Product: DURAEDGE, or approved equal

3. Manufacturer: J.D. Russell Company (1-800-888-7425,

www.jdrussellco.com), or approved equal. Available from Wyatt Irrigation Supply 707-578-3747 or John Deere Landscape 707-526-1171.

4. Color: Black, Powder Coat

D. Landscape Fabric:

1. Description: Product: Non-woven landscape fabric with 3 oz/sy minimum weight.

2. Product: 140 N (135 gal/ min flow rate)

3. Manufacturer: Mirafi or approved equal. Contact Eric Gibson at 310-903-2120.

E. Aggregate Base

1. Class II Permeable Base Rock, see aggregate base specification

F. EXCESS MATERIAL

1. Provide Owner with excess materials for use in future maintenance- provide at minimum 1/2 yard of aggregate in 50 lb sacks.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions: Examine areas and conditions under which Work is to be performed and identify conditions detrimental to proper or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with manufacturer's recommendations for product installation.

B. Layout stabilized decomposed granite paved areas (DG) per Drawings. Owner’s Representative to approve layout prior to excavation.

C. Do not proceed with installation of DG until all walls, curbs, headers, and paving and utility work in the area has been installed.

D. Excavate and compact the subgrade to depths, slopes and widths as shown on the Drawings. Do not over- excavate compacted subgrades of adjacent pavement or structures.

E. Confirm that the subgrade is at the proper elevation and compacted as required. Subgrade elevations slope parallel to the finished grade and/or as shown on the Drawings to provide positive drainage.

F. Set metal landscape edging per drawings and in accordance with manufacturer's specifications. Headers shall be set and staked to provide tight, clean lines, both vertically and horizontally. Set top of steel edging to provide positive drainage.

G. Install geotextile fabric per drawings and in accordance with manufacturer's specifications.

H. Place the stabilized decomposed granite on prepared sub-grade. Level to grade and cross section per plans.

I. Water per manufacturer's recommendations.

J. Compact per manufacturer recommendations. Do not use a vibratory plate. Roll and compact within 3 to 48 hours after placement. Product can be compacted up to 48 hours after placement.

1. Upon final compaction – finished surface of walkway shall be smooth, uniform, and solid. There shall be no evidence of chipping or cracking. Cured and compacted pathway shall be form throughout profile with no spongy areas. Loose material will not be present on the surface after installation but may appear after use and according to environmental conditions. Pathway should remain stable underneath the loose granite on top. It is a natural looking pathway, yet stable throughout. Any significant irregularities in path surface shall be repaired to the uniformity of entire installation.

L. Completed finished surface shall be consistent quality and free of deleterious materials such as organic materials, stones and loose material. Surface shall not have depressions or humps greater than 1/4" in ten feet.

M. Protect adjacent walls, walks and utilities from damage or staining by DG. Any

damage to paving or architectural work caused by DG installation shall be repaired by the Contractor at the Contractor's expense.

3.3 OBSERVATION SCHEDULE

A. The Contractor shall be responsible for notifying Owner's Representative 72 hours (3 working days) in advance for the following observations:

1. Layout of areas to receive DG.

2. Preparation of subgrade, prior to placing geotextile fabric

3. Upon final compaction

3.4 CLEAN-UP

A. As project progresses, Contractor shall maintain all areas in a neat manner and remove unsightly debris as necessary. After completion of project, Contractor shall remove all debris and containers used in accomplishing work, and clear paving and planting areas of DG.

END OF SECTION

SECTION 321600

CONCRETE SIDEWALKS AND CURBS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Construct concrete curbs and sidewalks.

B. Provide mockup of exterior concrete walk finish.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including the Division 01 Specification Sections apply to this Section.

B. Related Sections include, but are not limited to, the following:
1. Concrete – Section 030000
2. Cast-in-Place Concrete – Section 033000
3. Earthwork – Section 312000
4. Asphalt Paving and Base – Section 321216

1.3 REFERENCES

A. Reference Data:
1. If the year of the adoption or latest revision is omitted from the designation, it shall mean the specification, manual or test designation in effect the date the Notice to Proceed with the Work is given.

B. Caltrans Standard Specifications, Sections 73 (Concrete Curbs and Sidewalks) and 90 (Concrete).

C. City of Merced Standard Designs.

1.4 SUBMITTALS

A. Submit concrete mix design to Engineer for review at least 21 days prior to concrete.

B. Submit mockup of exterior concrete walk finish, including, but not limited to score pattern, color and texture to Architect for review prior to any concrete installation.

PART 2 - PRODUCTS

2.1 CONCRETE

A. Concrete shall comply with the applicable provisions of Section 90 "Concrete" of the Caltrans Standard Specifications for Section 90-2. “Minor Concrete” and meet the following requirements listed below.
1. Concrete shall have a minimum 28-day compressive strength of 3,000 psi.
2. Concrete shall have a maximum slump of 4 inches.
3. Concrete must contain at least 505 pounds of cementitious material per cubic yard.
4. Cementitious material must be Type II or V Portland cement or a combination of Type II or V Portland cement and other approved Supplementary Cementitious Materials (SCM’s). Typical SCM’s are ground granulated blast furnace slag, fly ash, silica flume, rice hull ash and natural pozzolans such as calcined shale,

calcined clay and metakaolin. The amount of SCM's in the concrete mix shall not exceed the requirements listed in section 90-1.02B of the Caltrans Standard Specifications.

5. The quantity of free water must not exceed 310 pounds per cubic yard of concrete plus 20 pounds of free water for each required 100 pounds of cementitious material in excess of 550 pounds of cementitious material per cubic yard of concrete.
6. The maximum coarse aggregate size must not be larger than 1-1/2" or smaller than ¾" and meet the gradation requirements in section 90-1.02C(4)(b).
7. Fine Aggregate grading shall meet the gradation requirements in section 90-1.02C(4)(c).
8. Acceptable admixtures shall conform to Section 90-1.02E. Chemical admixtures must comply with ASTM C 494, Air-entraining admixtures must comply with ASTM C 260.

PART 3 - EXECUTION

3.1 GENERAL

A. Curbs and walkways shall conform to the details shown on the plans.

B. Provide representative mockup of sidewalk including, but not limited to score pattern, color and finish for review and approval by Architect prior to construction.

C. Concrete finishes along accessible routes of travel shall be at least as slip-resistant as that described as a medium salted finish for slopes of less than 6%, and slip-resistant at slopes of 6% or greater.

D. Concrete finishes in non-accessible path of travel areas should be a medium broom finish.

3.2 SUBGRADE PREPARATION

A. As per Section 312000, Earthwork.

B. Minimum Class 2 aggregate base material under sidewalks as shown on the Drawings shall be at least 6 inches in compacted thickness, or otherwise noted.

C. Subgrade and forms shall be wet immediately before concrete placement.

D. Reinforcement shall be carefully placed and supported.

E. Steel dowels, reinforcement steel and welded wire reinforcement must comply with Section 52 "Reinforcement" of the California Standard Specifications

F. Apply soil sterilizer 6" each side of the edges of sidewalks/walkways to prevent growth of vegetation under sidewalks/walkways.

G. Excavate for thickened edges where they occur.

3.3 EXISTING CURBS, GUTTERS AND WALKWALKS

A. Joint shall be cut to a minimum depth of 1-1/2 inches with an abrasive type saw.

B. Joint shall be at first scoring line at or beyond the planned joint location.

3.4 FORMS

A. Smooth face against concrete, true smooth upper edge, and rigid enough to withstand pressure of fresh concrete without distortion.

B. Clean and oil coated.

C. Carefully set to alignment, grade and required dimensions.

D. Adequately secured from movement by stakes, clamps, spreaders, and braces.

3.5 CURB AND WALKWAY CONSTRUCTION

A. Dimensions as shown on Drawings.

B. Weakened plane joints shall be constructed at intervals not exceeding 10 feet.

C. Expansion joints, 1/2-inch-wide, shall be installed where the new walkway joins existing curbs, drainage structures, and other fixed objects and at intervals not exceeding 60'.

D. Expansion joints shall contain 1/2-inch thick pre-molded joint fillers the full thickness of concrete. Preformed expansion joint filler must comply with ASTM D 1751. Once concrete has cured, expansion joints shall be caulked.

E. The top and face of curbs, and non-decorative sidewalks, shall be finished with a steel trowel and be given a final fine brush finish.

F. The top and face of curb shall be true and straight and not vary more than 0.01 foot above or below the staked grade.

G. Concrete curing shall be as provided in Section 90-1.03B of the California Standard Specifications.

H. Repairs shall be made by removing and replacing the entire unit between scoring lines or joints.

3.6 ADJUST UTILITY BOXES

A. The Contractor shall adjust all existing and new utility boxes, and any other service castings falling within the limits of work to exact grade at the same time the concrete improvements are being constructed and shall maintain these appurtenances to true and exact grade until concrete is thoroughly set.

3.7 CURING

A. Moist Curing: Cover with reinforced waterproof curing paper. Seal all joints and weights down edges. Maintain moist for 14 days.

B. Liquid Curing Compound: Locations as approved by Architect. Apply a uniform coating within two hours of final troweling.

3.8 REPAIRS AND PROTECTIONS

A. Repair or replace broken or defective concrete as directed by Architect.

B. Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

3.9 CLEAN UP

A. Remove all debris and stains resulting from the work of this section.

END OF SECTION

SECTION 321816.13
PLAYGROUND RESILIENT SURFACING

PART 1 - GENERAL

1.01 WORK SCOPE

A. Furnish labor, material, and equipment necessary to install the poured-in-place, resilient surfacing system as shown on the drawings and specified herein.

a. Work shall include but not be limited to the following: layout; excavation; backfill; furnishing and installing of base material; furnishing and installing of poured-in-place, resilient surfacing and all other incidental work to provide a complete resilient surfacing system.

b. Poured in place playground surfacing shall consist of a polyurethane binder mixed with recycled rubber, which will make up the attenuation cushion layer. The attenuation cushion layer is capped with TPV granules, mixed with a polyurethane binder creating the Wear Course.

c. Surfaces shall comply with ADA and CPSC guidelines as well as ASTM Standards. Manufacturers are to be certified by IPEMA, a third-party testing organization for playground surfaces and equipment.

1.02 PERFORMANCE REQUIREMENTS

A. Area Safety: Poured in place within playground use zones shall meet or exceed the performance requirements of the CPSC, ADA and Fall Height Test ASTM F1292-18. The surface must yield both a peak deceleration of no more than 200 G-max and a Head Injury Criteria (HIC) value of no more than 1,000 for a head-first fall from the highest accessible portion of play equipment being installed as shown on drawings. IPEMA certification is required. (ASTM F1292-18, section 15 The laboratory test used to determine critical fall height shall have been conducted on surfacing material samples identical in design, materials, components, and thickness and manufactured as the installed playground surface).

B. Accessibility: NOTE: Children’s outdoor play areas shall be in compliance with the Uniform Federal Accessibility Standards (UFAS) FED-STD-795 and the Architectural and Engineer Instructions (9AEI) Design Criteria.

C. The requirements of the Americans with Disabilities Act. Accessibility Guidelines (ADAAG) 28 CFR Part 36 that provide equal or greater accessibility than the requirements of UFAS must also be met in children’s outdoor play areas.

D. Poured in place surfaces intended to serve as accessible paths of travel for persons with disabilities shall be firm, stable and slip resistant, and shall meet the requirements of ASTM F 1951-14 and ASTM F1292-18.

1.03 APPLICABLE STANDARDS

A. ASTM International

B. ASTM D2047 - Standard test method for determining the static coefficient of friction of ceramic tile and other like surfaces by the horizontal dynamometer pull meter method. This standard replaces ASTM C1028.

C. ASTM D412 – Standard test methods for vulcanized rubber and thermoplastic rubbers and thermoplastic elastomers-tension.

D. ASTM D624 - Standard test method for tear strength of conventional vulcanized rubber and thermoplastic elastomers.

E. ASTM D2859 – Standard test method for flammability of finished textile floor covering materials.

F. ASTM E303 – Standard test method for measuring surfacing frictional properties using the British Pendulum tester.

G. ASTM F1292-18 – Standard specification for impact attenuation of surface systems under and around playground equipment.

H. ASTM F1951 – Standard specification for determination of accessibility of surface systems under and around playground equipment.

I. Poured in place surfaces shall be manufactured and installed by trained, experienced company employees or National Playground Safety Institute (NPSI) certified.

1.04 SUBMITTALS: THE FOLLOWING SHALL BE SUBMITTED

A. The Contractor shall submit a complete set of the material submittals, as required, including manufacturer’s name and address, specific trade names, catalog and model numbers, illustrations and descriptive material, and samples of the proposed material for this project clearly marked as to proposed items for approval by the Owner’s representative.

B. Products submitted as equal must include hard copies of manufactures written specifications, warranty, purchase and use of materials.

C. Manufacturer’s descriptive data and installation instructions.

D. Manufacturer's details showing depths of wear course and sub-base materials, anchoring systems and edge details.

E. Upon request, a listing of at least five installations where products similar to these proposed for use have been installed and have been in service for a minimum period of three years. The list shall include owner or purchaser, address of installation, date of installation, contact person, and phone number.

F. A signed statement by an authorized official certifying that the surfacing system meets the requirements of ASTM F1292-18, section 15 for a head-first fall from the highest accessible portion of the specified playground equipment.

G. A signed statement from the manufacturer of the poured in place surfacing attesting that all materials under this section shall be installed only by the Manufacturer's Trained Installers.

H. A Certificate of Insurance shall be provided by the Manufacturer for poured in place surfacing for use as playground safety surfacing, covering general and product liability, of not less than $1,000,000 for each occurrence, $2,000,000 general aggregate, with an excess/umbrella liability of $25,000,000. The issuing underwriter shall be AA rated.

I. **IPEMA Certification mandatory**

1.05 Delivery, Storage and Handling: Materials and equipment shall be delivered and stored in accordance with the manufacturer's recommendations.

1.06 Project Site Conditions: Poured in Place surfacing must be installed on a dry sub-surface, with no prospect of rain within the initial drying period, and within the recommended temperature range of the manufacturer. Installation in weather conditions of extreme heat, cold (less than 55°F), and/or high humidity may affect cure time, and the structural integrity of the final product. Immediate surrounding sites must be reasonably free of dust conditions, or this could affect the final surface look.

1.07 Sequencing and Scheduling: Poured in Place surfacing shall be installed after all playground equipment, shade structures, signs and any other items that will be within the surface area. Coordinate with General Contractor.

1.08 Surface installation coordinated by manufacturer representative.

1.10 Warranty: Poured in Place surface shall maintain required impact attenuation characteristics and be guaranteed against defects in workmanship AND material for a limited seven-year period or as specified and agreed upon per alternate contract. Warranty will be specific to maintenance requirements and performance standards of completed product. Warranty is void if not installed by Manufacturers Trained and Certified Poured in Place Surfacing Installers.

1.11 Testing: NOTE: Critical Fall Height Four feet through 10 feet have been tested in

accordance with Section 15 – Critical Fall Height Test Procedure of ASTM F1292-18.

PART 2 – PRODUCTS

2.01 Safety surfacing shall consist of both recycled and synthetic materials meeting the requirements of this specification. The type of safety surfacing shall be Robertson Industries Inc., manufactured and installed by Robertson Industries Inc., or it's Certified Installers. Telephone: (800) 858-0519.

2.02 PRODUCT SCOPE

A. Poured in Place Surface: The poured in place surface shall consist of recycled rubber mixed with a polyurethane binder, then capped with .5-1.5mm TPV granules mixed with an aliphatic binder.

B. It shall consist of a uniform material manufactured in such a way that the top portion meets the requirements specified herein for wear surface.

C. The type of safety surfacing shall be a poured-in-place system and shall be indicated on the drawings.

2.03 ATTENUATION CUSHION LAYER SECTION

A. Impact attenuation cushion layer consists of these materials; recycled styrene butadiene rubber (SBR) and/or cryogenic crumb rubber and/or pre consumer postindustrial reclaimed scrap rubber adhered with a 100% solids polyurethane binder to form a resilient porous material.

B. Strands of SBR may vary from 0.5 mm – 2.0 mm in thickness by 3.0 mm – 20 mm in length.

C. Chunk Premium Black Rubber Granules are 5/8" granules: This rubber is pre-consumer, post-industrial, reclaimed rubber, granulated through a 5/8" screen and contains less than 2% dust.

D. SBR Crumb Rubber (5-9 Mesh) using sieve analysis ASTM D5644 with a fiber content of .1% or less mixed in.

E. Binder shall be between 7-12% of the total weight of the material and shall provide 100 % coating of the particles.

F. The attenuation cushion layer shall be compatible with the wear course and must meet requirements herein for impact attenuation.

2.04 WEAR COURSE

A. Wear course shall consist of .5-1.5mm Thermal Plastic Vulcanized (TPV) granules with polyurethane binder formulated to produce an even, uniform, seamless surface. Installation of surfacing shall be seamless (unless otherwise agreed upon by owner).

B. TPV shall be peroxide cured with an TPV content of 26% and shall include a processing aid to prevent hardness with 26% poly content to maintain dynamic testing characteristics, weatherization and UV stability.

C. ASTM D2240 (Shore A) hardness of 55-65, not less than 26 percent rubber hydrocarbons.

D. Size of TPV granules .5-1.5mm across. Binder shall be not less than 20% of total weight of rubber used in the wear surface and shall provide 100% coating of the particles.

E. Thickness of wear course shall be a minimum .5” (12.7 mm).

F. The wear course shall be porous.

2.05 **BINDER**

A. No Toluene Diphenyl Isocyanate (TDI) shall be used.

B. No filler materials shall be used in urethane such as plasticizers and the catalyzing agent shall contain no heavy metals.

C. Weight of polyurethane shall be no less than 8.5 lbs. /gal (1.02 Kg/1) and no more than 9.5 lbs. /gal (1.14 Kg/1).

D. Manufacturer is permitted to modify the type of urethane required to match extreme weather conditions. Substitutions must be equal to or exceed original quality.

2.06 **MATERIALS**

A. Wear Course: TPV Granules

B. Attenuation cushion layer Shredded and/or Chunk Rubber

C. Binder: Aliphatic Urethane Premium, Non-Ambering
Manufacturer: Accella Polyurethane Systems

D. Chunk Premium Black Rubber Granules

PART 3 – EXECUTION

3.01 **SITE PREPARATION**

A. Finished Grade/Slope: Verify that finished elevations or adjacent areas are as indicated on the architectural or site plans, that the appropriate sub-grade elevation has been established for the safety surface to be installed, and that the subsurface has been installed per architectural, site or equipment plans while meeting accessibility and use zones requirements.

B. Aggregate Subbase: Tolerance of aggregate sub-base shall be within .5” in depth. Verify that aggregate sub-base has been fully compacted. Per ADA Guidelines: compacted Aggregate sub-base – 4” of .75” minus irregular stone with fines compacted to 95% in 2” watered lifts.

C. Concrete Sub-Base: Tolerance of concrete or bituminous sub-base shall be with .125” (3.0 mm) in 10’ (3050 mm). Per ADA Guidelines: Concrete a minimum of 3” – 4” at a minimum 2500 PSI. Concrete must cure for 7 days prior to application of attenuation cushion layer. Concrete must cure 21 days if wear course is to be applied directly to concrete surface. If poured in place surfacing is installed, verify that the concrete sub-base has cured (all areas appear white in color usually at 7 days) and that all concrete curing compounds and other deleterious substances that might adversely affect adhesion have been removed. Surface shall be clean and dry.

D. Drainage: Verify that sub-surfacing drainage, if required, has been installed to provide positive drainage.

3.02 INSTALLATION

A. Poured in Place Surfacing: Components of the poured in place surfacing shall be mixed on site in a rotating tumbler to ensure components are thoroughly mixed and are in accordance with manufacturers’ recommendations. Installation of surfacing shall be seamless up to 2,000 square feet per day. Material shall cover all foundations and fill around all elements penetrating the surface.

B. Attenuation Cushion Layer: Whenever practical, attenuation cushion layer of surfacing material shall be installed in one continuous pour on the same day of up to 2,000 square feet. When a second pour is required, step the seam (see detail) and fully coat the step of the previous work with polyurethane binder to ensure 100% bond with new work. Apply adhesive in small quantities so that new attenuation cushion layer can be placed before the adhesive dries.

C. Wear Course: Wear course must be quality peroxide cured TPV granules. wear surface shall be bonded to attenuation cushion layer. If necessary, additional primer will be used between the attenuation cushion layer and wear course. Apply adhesive to attenuation cushion layer in small quantities allowing the wear course to be applied before adhesive dries. Surface shall be hand troweled to a smooth, even finish. Expect

continuous and seamless up to 2,000 square feet per day (contact sales representative for seamless in excess of 2,000 square feet). Where seams are required due to color change, size or adverse weather, a step configuration will be constructed to maintain wear course integrity. The edge of initial pour shall be coated with adhesive and wearing surface mixture shall be immediately applied. Pads with multiple seams are encouraged to include a top coat of urethane before being placed into use. Butt joint seams are not acceptable except for repairs. Under special conditions and with Owners written approval seams may be permitted in same color pad. Consult with Manufacturer for specific applications.

D. Perimeter: For installations over existing concrete, the perimeter shall be saw cut to provide a keyway 1" deep x 1" wide, or formed during the pour, with surfacing rolled down into the void. Primer adhesive must be applied to all sides of the void. When connecting to a concrete curb or border, the inside vertical edge shall be primed with adhesive and the final 2" of the attenuation cushion layer shall be tapered to allow the wear surface material to be 1.5"– 2" thick where it joins the concrete.

E. Thickness: Construction methods such as the use of measured screeds or guides shall be employed to ensure that the full depth of specified surfacing material is installed. Surfacing system thickness throughout the playground equipment use zone shall be as required to meet the impact attenuation requirements specified herein.

F. Clean Up: Manufacturer installers shall work to minimize excessive adhesive on adjacent surfaces or play equipment. Spills of excess adhesive shall be promptly cleaned.

G. Protection: The safety surface shall be allowed to fully cure in accordance with Manufacturer's instructions. The surface shall be protected by the owner from all traffic during the curing period of at a minimum of 48 hours or as instructed by the Manufacturer.

H. Manufacturer Services: For poured in place safety surfacing, a Manufacturer's representative who is experienced in the installation of playground safety surfacing shall be provided. The representative shall supervise the installation to ensure that the system meets the impact attenuation requirements as specified herein.

3.03 SITE AREA CLEAN UP

The site shall be kept clean and free of tools, trash, and debris and installation materials daily. Products may be stored on site during installation with appropriate protective measures and approval by the Owner's representative.

END OF SECTION

SECTION 323119

DECORATIVE METAL FENCES AND GATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Steel picket fences.
2. Swing gates.
3. Gate operators, including controls.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference with Owner’s Representative and Landscape Architect.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For fencing and gates.

1. Include plans, elevations, sections, and attachment details.
2. Include diagrams for power, signal, and control wiring.

C. Samples: For each fence material and for each color specified.

1.4 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

B. Product test reports.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Fabricator of products.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Wind Loading: Comply with ASCE/SEI 7 requirements for fence height, wind exposure, design wind speed, and design wind pressure.

B. Lightning-Protection System: Maximum grounding-resistance value of 25 ohms under normal dry conditions.

2.2 DECORATIVE STEEL FENCES

A. Decorative Steel Fences: Fences made from steel tubing and shapes.

B. Posts: Square steel tubing. Per Plan

C. Post Caps: Steel

D. Rails:

1. Steel Tube Rails: Square steel tubing per plan.
2. Steel Channel Rails: Steel channels per plan.

E. Pickets: Per plan.

1. Picket Spacing: Per plan.

F. Infill: Forge-welded-steel bar grating.

1. Perimeter Bars: Steel flat bars.
2. Vertical Main Bars: Steel flat bars.
3. Vertical Main Bar Spacing:
4. Horizontal Cross Rods:
5. Horizontal Cross Rod Spacing:

G. Fasteners: Stainless-steel carriage bolts and tamperproof nuts.

H. Fabrication: Assemble fences into sections by welding pickets to rails.

I. Fabrication: Fabricate bar grating infill into sections of size indicated.

J. Finish for Bar Grating Infill: Powder coating.

K. Finish for Steel Items: Powder coating.

L. Finish for Metallic-Coated-Steel Items: High-performance coating.

2.3 SWING GATES

A. Steel Frames and Bracing: Fabricate members from square steel tubing per plan thickness. Hot-dip galvanized frames after fabrication.

B. Hardware: Latches permitting operation from both sides of gate, hinges, and keepers for each gate leaf more than 5 feet (1.52 m) wide. Provide center gate stops and cane bolts for pairs of gates. Fabricate latches with integral eye openings for padlocking; padlock accessible from both sides of gate.

C. Steel Finish: Per plan

2.4 GATE OPERATORS

A. Gate Operators:

B. Provide factory-assembled automatic operating system designed for gate size, type, weight, and operation frequency. Provide operation control system with characteristics suitable for Project conditions, with remote-control stations, safety devices, and weatherproof enclosures; coordinate electrical requirements with building electrical system.

1. Provide operator with UL approved components.

C. Comply with NFPA 70.

D. UL Standard: Manufacturer and label gate operators to comply with UL 325.

2.5 ALUMINUM

A. Extrusions: ASTM B221 (ASTM B221M), Alloy 6063-T5.

B. Tubing: ASTM B429/B429M, Alloy 6063-T6.

C. Castings: ASTM B26/B26M, Alloy A356.0-T6.

2.6 STEEL AND IRON

A. Plates, Shapes, and Bars: ASTM A36/A36M.

B. Bars (Pickets): Hot-rolled, carbon steel complying with ASTM A29/A29M, Grade 1010.

C. Tubing: ASTM A500/A500M, cold-formed steel tubing.

D. Bar Grating: NAAMM MBG 531.

E. Uncoated Steel Sheet: Hot-rolled steel sheet, ASTM A1011/A1011M, Structural Steel, Grade 45 (Grade 310)

2.7 COATING MATERIALS

A. Intermediate Coat for Uncoated Steel: Epoxy or polyurethane intermediate recommended in writing by primer and topcoat manufacturer, per vendor.

B. Polyurethane Intermediate Coat and Topcoat: Complying with MPI #72 and compatible with undercoat.

2.8 MISCELLANEOUS MATERIALS

A. Concrete: Normal-weight, air-entrained, ready-mix concrete complying with requirements in Section 033000 "Cast-in-Place Concrete" with a minimum 28-day compressive strength of 3000 psi (20 MPa), 3-inch slump, and 1-inch maximum aggregate size.

2.9 GROUNDING MATERIALS

A. Comply with requirements of Section 260526 "Grounding and Bonding for Electrical Systems."

B. Grounding Conductors: Size as indicated on Drawings. Bare, solid wire for No. 6 AWG and smaller; stranded wire for No. 4 AWG and larger.

1. Material above Finished Grade: Aluminum.
2. Material on or below Finished Grade: Copper.

C. Grounding Connectors and Grounding Rods: Comply with UL 467.

2.10 STEEL FINISHES

A. Surface Preparation: Clean surfaces according to SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning." After cleaning, apply a conversion coating compatible with the organic coating to be applied over it.

B. Powder Coating: Immediately after cleaning, apply manufacturer's standard two-coat finish consisting of epoxy primer and TGIC polyester topcoat to a minimum total dry film thickness of not less than 8 mils. Comply with coating manufacturer's written instructions.

1. Color and Gloss: Match Architect's sample

C. After cleaning, to provide a minimum dry film thickness of 2 mils per applied coat, to surfaces that are exposed after assembly and installation, and to concealed surfaces.

D. High-Performance Coating: Apply intermediate and polyurethane topcoats to prime-coated surfaces. Comply with coating manufacturer's written instructions and with requirements in SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting. Apply at spreading rates recommended by coating manufacturer.

1. Match approved Samples for color, texture, and coverage. Remove and refinish or recoat work that does not comply with specified requirements.

E. Powder Coating: Immediately after cleaning and pretreating, apply manufacturer's standard TGIC polyester powder-coat finish to a minimum dry film thickness of 2 mils.

1. Color and Gloss: Match Architect's sample

F. Powder Coating: Immediately after cleaning and pretreating, apply manufacturer's standard two-coat finish consisting of zinc-rich epoxy prime coat and TGIC polyester topcoat to a minimum dry film thickness of 2 mils. Comply with coating manufacturer's written instructions to achieve a minimum total dry film thickness of 4 mils.

1. Color and Gloss: As indicated by manufacturer's designations and per contract documents.

G. High-Performance Coating: Apply epoxy primer, polyurethane intermediate coat, and polyurethane topcoat to prepared surfaces. Comply with coating manufacturer's written instructions and with requirements in SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting. Apply at spreading rates recommended by coating manufacturer.

1. Match approved Samples for color, texture, and coverage. Remove and refinish or recoat work that does not comply with specified requirements.

PART 3 - EXECUTION

3.1 DECORATIVE FENCE INSTALLATION

A. Install fences according to manufacturer's written instructions.

B. Install fences by setting posts as indicated and fastening per manufacturer.

C. Post Excavation: Per plan.

D. Post Setting: Per Plan.

1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
2. Concrete Fill: Per plan.
3. Posts Set in Concrete: Per plan.
4. Space posts uniformly per plan.

3.2 GATE INSTALLATION

A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.3 GATE OPERATOR INSTALLATION

A. General: Install gate operators according to manufacturer's written instructions, aligned and true to fence line and grade.

B. Excavation for Support Posts: Hand-excavate holes for bases in firm, undisturbed soil to dimensions and depths and at locations as required by gate operator component manufacturer's written instructions and as indicated.

C. Concrete Bases: Cast-in-place concrete per plan.

D. Comply with NFPA 70 and manufacturer's written instructions for grounding of electric-powered motors, controls, and other devices.

3.4 GROUNDING AND BONDING

A. Comply with Section 260526 "Grounding and Bonding for Electrical Systems."

B. Fence Grounding: Install at maximum intervals of 1500 feet except as follows:

1. Fences within 100 Feet of Buildings, Structures, Walkways, and Roadways: Ground at maximum intervals of 750 feet.

a. Gates and Other Fence Openings: Ground fence on each side of opening.

C. Grounding Method: At each grounding location, drive a grounding rod vertically until the top is 6 inches below finished grade. Connect rod to fence with No. 6 AWG conductor. Connect conductor to each fence component at grounding location.

D. Bonding Method for Gates: Connect bonding jumper between gate post and gate frame.

E. Connections: Make connections so possibility of galvanic action or electrolysis is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact are galvanically compatible.

F. Bonding to Lightning-Protection System: If fence terminates at lightning-protected building or structure, ground the fence and bond the fence grounding conductor to lightning-protection down conductor or lightning-protection grounding conductor, complying with NFPA 780.

3.5 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

1. Grounding-Resistance Tests: Subject completed grounding system to a megger test at each grounding location. Measure grounding resistance not less than two full days after last trace of precipitation, without soil having been moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural grounding resistance. Perform tests by two-point method according to IEEE 81.

END OF SECTION 323119

SECTION 323300

SITE FURNISHINGS AND EQUIPMENT

PART 1 - GENERAL

1.01 CONDITIONS

A. The general provisions of the Contract, including General and Supplementary Conditions and General Requirements apply to the work specified in this Section.

1.02 DESCRIPTION

A. Work includes but is not limited to the following:

B. Furnish all labor, materials, tools, equipment, operation or methods listed, mentioned or scheduled on the Contract Documents and/or herein specified inthis Section.

C. Although such Work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.

D. Completely coordinate with work of all other trades.

1.03 QUALITY ASSURANCE

A. All products or items described herein shall be new, unless otherwise specified, and shall be from the specified manufacturer or approved equal. Products shall be complete in all respects, properly installed, and in perfect working order.

1.04 QUALIFICATION OF INSTALLER

A. Installer shall be thoroughly trained and experienced in the skills required, and shall be completely familiar with the products and their installation as specified on the Contract Documents and in this Section. Installer shall be present at all times during progress of Work of this Section and shall direct all work performed.

1.05 COORDINATION

A. Contractor shall be charged with the responsibility of making arrangements for the coordination of his construction operations with those of all others on the job, and heshall permit other forces so engaged to accomplish their portion of the Work without undue interference or delay.

B. Contractor shall place order for all site furnishings and equipment immediately after

award of bid to ensure adequate time for manufacturing, shipping and installation. Ifany materials or equipment are not ordered in time, additional costs made by equipment manufacturers to their equipment in time to meet construction schedule together with any special handling costs, shall be borne by the Contractor. **NO** project extension shall be granted due to improper lead time in ordering.

1.06 SUBMITTALS

A. Submit one (1) electronic copy (preferred) or one (1) hard copy of manufacturer's catalog cuts off all products to the Owners Representative for approval. Catalog cuts shall clearly identify product, finishes, color, schedule and installation.

B. Submit one (1) electronic copy (preferred) or one (1) hard copy of the play equipment shop drawings to the Owner's Representative approval. Shop drawings shall clearly identify product, materials, connections, equipment, safety railings, finishes, color, schedule and installation.

C. All approvals must be granted prior to ordering product.

PART 2 - PRODUCTS

2.01 PARK SIGNS

A. Submit shop drawings for approval prior to ordering signs. Refer to construction plans for design; all products shall be as specified or approved equal.

PART 3 - EXECUTION

3.01 GENERAL

A. Work shall be set true to line and shall present a neat and finished appearance. Includes setting each item in its correct place, fastening it, connecting it, or incorporating it into other portions of work, as each item may require; testing and operating equipment to assure proper functioning. Furnish anchors and adhesivesrequired for installing and attaching the equipment specified herein.

B. Install per manufacturer’s instructions and specifications.

3.02 INSTALLATION OF PARK SIGN

A. Park sign shall be located as indicated on the Contract Documents for Owner’s Representative approval prior to installation.

B. Contractor shall be responsible for installing any footing, as detailed by themanufacturer,

onsite for signs with base.

C. Lifting points located on the top of the sign shall be patched in the field by theContractor with color matching material.

3.03 INSTALLATION OF BENCHES

A. Locate benches as indicated on Contract Documents for Owner's Representativeapproval prior to installation.

B. Install items level and plumb.

C. Surface mount as detailed on the Contract Documents and in conformance with manufacturer's specifications.

3.04 INSTALLATION OF PICNIC TABLES

A. Locate picnic tables as indicated on Contract Documents for Owner's Representative approval prior to installation.

B. Install items level and plumb.

C. Surface mount as detailed on the Contract Documents and in conformance with manufacturer's specifications.

3.05 INSTALLATION OF TRASH RECEPTACLE

A. Install as detailed on the Contract Documents and in conformance with themanufacturer's specifications.

3.06 INSTALLATION OF PLAY EQUIPMENT

A. Install as detailed on the Contract Documents and in conformance with the manufacturer's specifications. Equipment shall be composed of such material and constructed as specified by the individual manufacturer’s specifications. All posts shall be steel. The contractor will be responsible for receiving and storing the playequipment until it is installed. Manufacturer to provide repair kit with paint, details, specifications and all necessary tools.

B. Coordination of all play equipment components in relation to the depth of components within the specified play area surfacing material and drainage items willbe required to be verified prior to placement of order of play equipment. Verify specific play components with the type of surfacing material(s) to ensure required depths are achieved.

C. Contractor shall assemble and install playground equipment, required signs and labels in

compliance with thewritten instructions of the manufacturer. The playground equipment shall be assembled and installed by or under the direct supervision of an individual who is authorized by the manufacturer to assemble and install the equipment.

D. Prior to final project approval and acceptance, the playground equipment shall be inspected by a Certified Playground Safety Inspector who shall certify in writing thatthe equipment, insofar as it can be seen without disassembling it or digging into thesurfacing, is in compliance with ASTM F-1487-98 and CPSC Handbook Publicationnumber 325.

E. Install in conformance with all applicable playground accessible requirements and consumer Product Safety Commission Guidelines for public playground safety.

F. The Contractor shall install a 6'-0" high temporary barrier fence around the play area, until final acceptance has been granted.

3.07 INSTALLATION OF WOOD FIBER

A. Contractor to confirm slope construction prior to installation of resilient surfacing.

B. Subgrade for play area shall be free of segregated material and shall have a relative compaction of not less than 85%. Subgrade shall be finish graded and sloped to drain to the play area catch basin at a 1% minimum slope. See Grading Drawings formore information.

C. Geotextile Fabric shall be placed on top of the prepared sub-grade as shown on theplans, so as not to allow any contact between the wood fiber and the sub-grade. Geotextile fabric shall be held in place by the use of staples or fasteners along all corners and seams at approximately 10' O.C. or closer as required to hold fabric in place.

D. Wood Fiber shall be 100% virgin wood fiber comprised of new Incense Cedar. Wood fiber shall have blunt ends, and shall be void of mixed woods, recycled wood, nails, staples, bark, leaves, dirt, twigs or splinters. Wood Fiber shall be non-toxic with no chemicals or additives, and shall be wheelchair accessible. Wood fiber fall material shall meet CPSC & ASTM Standards for Public Playgrounds.

E. Wood fiber shall be installed within forty-eight (48) hours after play equipment is installed. Wood fiber shall be placed on top of the geotextile fabric as shown on theplans. The wood fiber shall be uniform, level and compacted. Contractor shall thoroughly moisten wood fiber during installation and installed in lifts per manufacturer's directions, roll each lift with a partially filled lawn roller in all directions for compaction. The wood fiber shall be compacted to a minimum 12" finished depth at the edges of play area at the time of final acceptance by the Owner. The depth of wood fiber in the center of the play area will be greater.

3.08 INSTALLATION OF PLAYGROUND RESILIENT SURFACING

A. Refer to Section 32 18 16.13

3.09 PROTECTION

A. Adequately protect all work form damage by subsequent construction operations. Damaged work shall be replaced by Contractor and at Contractor's expense.

END OF SECTION

Section 328400
Planting Irrigation

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Work of this section includes all labor and materials necessary to construct and / or modify the irrigation system as shown on the drawings and specified herein.

B. The work includes all labor, materials, processes, and equipment necessary to complete and test the irrigation system work as indicated on the Drawings and specified herein.

C. All incidental parts, which are not shown on the plans or specified herein and are necessary to complete or modify the existing system shall be furnished and installed as though such parts were shown on plans or specifications.

D. The work includes, but is not limited to, the following:

1. Pipes and fittings.
2. Manual and Automatic Control Valves.
3. Rotors, Rotators, and Sprinklers.
4. Drip distribution tubing and emission devices.
5. Controller(s) and control elements.
6. Low voltage control wire and connections
7. Valve boxes and enclosures.

E. Related Documents and Sections:

1. Section 0 22 30 “Site Clearing”
2. Division 01 “Closeout Submittals”
3. Section 03 30 00 “Cast-In-Place Concrete”

4. Section 31 20 00 “Earthwork”

5. Section 0 29 05 “Landscape Installation”

6. Section 320190.13 “Landscape Maintenance”

1.3 DEFINITIONS

A. American Public Works Association (APWA)

B. American Standards for Testing and Materials (ASTM)

C. American Water Works Association (AWWA)

D. National Electric Code (NEC)

E. Uniformed Plumbing Code (UPC)

F. Manufacturer’s Standardization Society of Valve and Fitting Industry (MSS)

1.4 SUBMITTALS

A. Product Submittals: Submit three (3) copies of the proposed irrigation construction materials to the Landscape Architect for review and approval a minimum of then (10) working days prior to commencement of work. The plan must follow the specifications and design criteria as outlined herein.

1. Each submittal shall include manufacturer’s product information (‘cut’) sheets for all components and materials proposed for use in fabricating and install the irrigation system, including but not limited to:
   a. Pipes and fittings.
   b. Manual valves.
   c. Pressure-reducing valves.
   d. Automatic control valves and accessories.
   e. Transition fittings.
   f. Rotors, Rotators, and Sprinklers.
   g. Quick couplers.
   h. Drip irrigation specialties.
   i. Controllers.
   j. Boxes for manual and automatic control valves.
   k. Enclosures for backflow preventers and controllers.
   l. Include rated capacities, and operating characteristics.

B. Record Copy Drawings: During the course of installation, carefully show all field changes in red line on a print of the irrigation system as installed. This drawing shall be labeled “Record Copy”, and shall be made available for inspection. The status of the

"Record Drawing" shall correlate directly with the percentage of work completed as described in the Contractor's Pay Request and may be used as a guide when approving payments.

C. As-Built Drawings: Upon completion of the work of this section and as a condition of its acceptance, the Contractor shall deliver to the Landscape Architect the following:

1. Drawings: Submit three (3) prints and one (1) reproducible and/or electronic file of as-built drawings. As-Built drawings shall clearly show all original components of the Record Copy and all changes documented in the Record Copy. Main lines, valves, valve boxes, and valve markers and other buried equipment shall be positively located by a minimum of two dimensions each from two (2) fixed reference points.

2. Maintenance Manual: Submit three (3) copies containing the following:
   a. Catalog cut sheets of all irrigation materials installed.
   b. Contractor's name, address and telephone number.
   c. The duration of the guarantee periods
   d. The name and address of the local manufacturer's representative.
   e. List and description of routine maintenance procedures, including winterization, start-up, and recommended watering times for each zone.
   f. Troubleshooting guide.

D. Landscape Irrigation Audit: Upon completion of the work of this section and as a condition of its acceptance, the Contractor shall deliver to the Landscape Architect the following:

1. Landscape Irrigation Audit Certificate: Submit two (2) copies of the Irrigation Audit Report prepared by a certified landscape irrigation auditor. Proof of certification must be provided with the signed and dated report.

2. Landscape Irrigation Audit must be submitted and approved prior to the Date of Final Completion.

3. Landscape Irrigation Audit shall be in compliance with the latest edition of the State of California Model Water Efficient Landscape Ordinance (MWELO). The MWELO is also referenced by Title 24, Part 11, Chapters 4 and 5 CalGreen Building Code.

4. Landscape Irrigation Audit shall be conducted by a local agency landscape irrigation auditor or a third-party certified landscape irrigation auditor. Landscape audits shall not be conducted by the person who designed or installed the landscape irrigation system.

1.5 QUALITY ASSURANCE

A. Proprietary items shown on the drawings and specified herein are shown to establish standards of quality, utility, design and function. Equivalent units by other manufacturers (substitutions) will be considered provided they are similar in characteristics. They shall be substituted only if approved by the Landscape Architect.

B. The Contractor shall store all PVC pipe and fittings out of direct sunlight and protect from physical damage.

C. The Contractor shall store and protect all specified components from adverse weather conditions until installation is complete.

D. The Contractor shall handle all components as directed by the manufacturer's handling and installation instructions. Damage from transport or other handling of materials shall be the responsibility of the Contractor.

E. All local, municipal and state laws and rules and regulations governing or relating to any portion of this work and hereby incorporated into and made a part of these specifications and the Contractor shall carry out their provisions. Any specification herein contained, shall not be construed to conflict with the above rules, regulations or requirements.

1.6 PROJECT CONDITIONS

A. Inspection of the site: The Contractor shall inspect the site prior to construction and verify the extent of the work required. Commencement of construction by the Contractor designates acceptance of the site conditions apparent at outset. The Contractor shall obtain approval to access system components for inspection prior to commencement of construction.

B. The Contractor shall verify the locations of all existing utilities, structures, and services before commencing work. The location of utilities, structures, and services shown on these plans are approximate only. Any discrepancies between these plans and the actual field conditions shall be reported to the Landscape Architect immediately.

C. Weather Limitations: Work shall be performed only when weather conditions do not detrimentally affect the quality of work as intended and shown on these plan sheets.

D. Project Limits: Areas, as specified within which work is to be performed.

E. If new mainline is required in areas not currently described on the construction documents, submit a shop drawing of location, hydraulics, and system layout for new extension to Landscape Architect for approval prior to commencement of construction.

F. The Contractor shall protect all areas of work defined on the drawings and any existing on-site vegetation, structures, utilities, etc. All damage which occurs as a result of work

under this contract shall be repaired at no cost to the Owner. The contractor shall be responsible for the provision of traffic control, barricades, safety guards, and any other structures or improvements necessary for the complete protection of the public. The Contractor shall verify water sources and install labeled components as required by state and federal laws.

G. The Contractor shall verify, locate, and protect all existing utilities and features on and adjacent to the project site during construction and shall repair, at their own expense: all damage as a result of construction activities.

H. The Contractor shall, at all times, take adequate precautions to keep rock, dirt, gravel, debris, and all other foreign materials from entering piping, valves, and other irrigation equipment.

1.7 COORDINATION

A. Coordinate with other trades affecting or affected by work of this section.

B. Verify that sleeving and other conduits, of sizes and types specified, are installed as required.

C. Prior to the start of work the Contractor shall verify that the performance and components of the existing site systems are in accord with current jurisdictional requirements and that all necessary components are located as shown on the drawings.

D. The Contractor shall protect the existing site systems and maintain their performance at all times during the work of this section unless otherwise approved by the Landscape Architect. The Contractor shall cap all lines that are cut by new construction and/or re-route to maintain existing system performance.

E. The Irrigation Contractor shall have a Supervisor on-site at all times while work is being performed. Supervisor must be available to communicate with other project personnel at all times.

1.8 GUARANTEE

A. The Contractor guarantees that all new irrigation components installed, as part of this work shall be free from defects in materials, design, and workmanship for a period of one year from Date of Final Acceptance.

B. Upon notice from the Landscape Architect of failure on any part of the installed equipment during the guarantee period, due to material fatigue, normal wear or faulty installation procedures, new replacement parts shall be promptly furnished and installed by the Contractor at no additional cost to the Owner. Damages to property or site improvements resulting from the failure of specified components shall be repaired promptly, at no additional cost to the Owner.

C. The Contractor shall be responsible for grade settlement, and/or erosion of soil surfaces resulting from defects in irrigation installation throughout the specified warranty period.

1.9 DAMAGES

A. Any structures or facilities or surfaces damaged due to work of this project shall be restored equal or better to their original condition at Contractor's expense and to the satisfaction of the Owner and the Landscape Architect

B. The Contractor shall be responsible for all damage caused by leaks or breaks in pipe furnished or installed in this contract for one year after Date of Final Acceptance.

1.10 EXISTING UTILITIES

A. Locate and identify, with visible marking, existing underground utilities in the areas of work. If utilities are to remain in place, provide adequate means of protection during excavation operations.

B. Should uncharted piping or other utilities be encountered during excavation, consult the Landscape Architect and Owner immediately for directions. Cooperate with the Owner and public or private utility companies in keeping their respective services and facilities in operation. Repair damaged utilities to the satisfaction of the utility owner and Owner. The cost of repairing charted or known utilities shall be paid by the contractor.

C. Do not interrupt existing utilities service facilities occupied and used by the Owner or others, except when permitted in writing by the Landscape Architect and then only after acceptable temporary utility services have been provided.

D. Point-of-connection to incoming water services for irrigation shall be made upstream of any other services.

PART 2 - PRODUCTS

2.1 GENERAL PRODUCT REQUIREMENTS

A. Materials and equipment shall be new, delivered to site in original factory condition, and as specified in this section.

2.2 PVC PIPE

A. Pipe Sleeves

1. Pipe Sleeves Pipe sleeves six (6) inch and larger shall be High Density Polyethylene (HDPE) with smooth interior wall and annular exterior corrugations meeting ASTM F2648 or approved equal.

2. Pipe sleeves four (4) inch and smaller shall be PVC Schedule 40 Bell End, Type 1 white, NSF approved, for solvent weld meeting requirements meeting ASTM D1785 or approved equal.

B. Pressure Main Line

1. Pressure main line pipe four (4) inch and larger shall be PVC Class 200 Gasket Joint, Type 1 white, NSF approved, gasket push on pipe meeting requirements ASTM D2241.

2. Pressure main line pipe two and one half (2-1/2) to three (3) inch shall be PVC Class 315 Bell End, Type 1 white, NSF approved, for solvent weld meeting requirements ASTM D2241.

3. Pressure main line pipe two (2) inch and smaller shall be PVC Schedule 40 Bell End, Type 1 white, NSF approved, for solvent weld meeting requirements ASTM D1785.

C. Non-Pressure Lateral Line

1. Non-pressure lateral line two and one half (2-1/2) to four (4) inch: PVC Class 315, Type 1 white, NSF approved, solvent weld pipe meeting the requirements of ASTM D2241.

2. Non-pressure lateral lines two (2) inch and smaller shall be PVC Schedule 40, Type 1 white, NSF approved, solvent weld pipe meeting the requirements of ASTM D1785.
   a. Solvent weld for assembly shall be as per manufacturer's specifications.
   b. Non-pressure lateral fittings two and one half (2-1/2) to four (4) inch shall be PVC Schedule 40 socket and/or threaded fittings.

2.3 PVC NIPPLES

A. Pipe nipples shall be extruded PVC Schedule 80, Type 1, Schedule 80, one piece gray, standard weight with machine threads, both ends, to meet ASTM D1784, or approved equal.

2.4 IPS PVC FLEX PIPE

A. IPS PVC Flex Pipe shall be UV and Algae resistant, heavy wall, black meeting the requirements of ASTM D2287 and ASTM D1599, maximum operating pressure 60PSI @ 73° F.

B. IPS PVC Flex Pipe shall be compatible for use with PVC Schedule 40 fittings.

2.5 PVC PIPE FITTINGS

A. Pressure Mainline Gasket Pipe Fittings.

1. Manufacturer and model as per drawings, or approved equal.

2. Joint Restraints shall be epoxy coated, ductile iron to meet ASTM A-536, Grade 65-45-12 & AWWA C153.

3. Restraints shall have blunt cast serrations. Machined threaded restraints shall not be allowed.

B. Pressure Mainline Solvent Weld Pipe Fittings.

1. Fittings shall be schedule 80, polyvinyl chloride, standard weight, or approved equal, to meet ASTM D-2467.

C. Non-Pressure Lateral Pipe Fittings.

1. Fittings shall be schedule 40, polyvinyl chloride, standard weight, or approved equal, to meet ASTM D-2466.

D. IPS PVC Flex Pipe Fittings.

1. Fittings shall be schedule 40, polyvinyl chloride, standard weight, or approved equal, to meet ASTM D-2466.

2.6 PVC CONDUIT AND FITTINGS

A. PVC Conduit shall be Schedule 40, gray, listed to UL 651 and manufactured in accordance with NEMA TC2, labeled or marked showing evidence of third-party listing to product standard, listed as sunlight resistant, listed for use with 90° conductors.

B. PVC Conduit Fittings shall be Schedule 40, gray, including fabricated fittings, junction-box adapters, threaded adapters shall be listed to UL 651 and manufactured in accordance with NEMA TC-3.

2.7 PIPE JOINING COMPOUNDS

A. Lubricant for gasket joint pipe and joint restraints shall be as recommended by manufacturers of PVC pipe and Joint Restraints.

B. PVC Primer shall be low VOC emission, non-bodied, fast acting, purple to meet ASTM F 656 Standard and as recommended by PVC pipe and fitting manufacturer, or approved equal.

C. PVC Solvent Cement for PVC pressure mainline pipe and fittings shall be heavy bodied, medium setting, low VOC emission, gray to meet ASTM D2564 and as recommended by PVC pipe and fitting manufacturer, or approved equal.

D. PVC Solvent Cement for PVC non pressure lateral pipe and fittings shall be medium bodied, fast setting, Low VOC emissions, clear to meet ASTM D2564 and as recommended by PVC pipe and fitting manufacturer, or approved equal.

E. PVC Solvent Cement for IPS PVC flexible pipe shall be medium bodied, fast setting, low VOC emissions, solvent cement for use on flex/flex and flex/rigid PVC, blue to meet ASTM D2564 and as recommended by IPS PVC flexible pipe manufacturer, or approved equal.

F. Teflon (PTFE) Paste for PVC threaded fittings shall be non-hardening, lubricating anti-sieve formulation, silicon free, suitable for sealing threads in metals, ABS, PVC, CPVC and Nylon piping systems, NSF approved to meet and exceed TT-5-1732.

G. Teflon (PTFE) Tape for PVC threaded fittings shall be medium density, white and as recommended by PVC fitting manufacturer, or approved equal.

2.8 TRANSITION FITTINGS

A. General Requirements: Same size as, and with pressure rating at least equal to and with ends compatible with, piping to be joined.

B. Transition Couplings: AWWA C219, epoxy coated ductile iron sleeve-type coupling with styrene butadiene rubber gaskets and five-eight (5/8) inch high strength bolts for underground pressure piping,

C. Plastic-to-Metal Transition Fittings: PVC Schedule 80, one-piece fitting with one end with threaded male iron pipe threads and one solvent-cement-socket end.

D. Plastic-to-Metal Transition Unions: PVC Schedule 80, four-part union with one brass threaded end, one plastic threaded end, rubber O-ring, and union nut.

2.9 BACKFLOW PREVENTER

A. Backflow Preventer: Manufacturer and model as shown on drawings and as approved by local authorities.

B. Backflow Preventer Enclosure: Vandal and weather resistant enclosure formed from stainless steel tubing and rod that is coated in a high-performance polymer coating, all

locking and mounting hardware is manufactured entirely of stainless steel, to meet This cage has an ASSE 1060 Class III rating. Manufacturer and model as shown on drawings, or approved equal.

C. Backflow Preventer Insulated Cover: Slip on cover with grommets on both sides, R19 insulation rating using Radiant Barrier Foil (RBF) inserted between acrylic polyester and air bubble pack. Manufacturer and model as shown on drawings, or approved equal.

2.10 MAINLINE MANUAL VALVES

A. Iron Gate Valve: Manufacturer and model as shown on drawings, or approved equal. Ductile iron gate valve shall be ANSI/AWWA C509 with rubber encapsulated resilient seated wedge, fusion bonded epoxy coating, non-rising stem, Class 125 flanged ends and two (2) inch operating nut. Operating wrenches for iron gate valve shall be steel, tee-handle with one pointed end, stem of length to operate deepest buried valve, and socket matching valve operating nut for Project.

B. Bronze Ball Valve: Manufacturer and model as shown on drawings, or approved equal. Low lead bronze ball valve shall be NSF/ASNI Listed 372, full port (not reduced) rated to 400 WOG, 350°F and supplied with TFE Teflon seat, threaded ends (FNPT), cast bronze cross or stainless steel “T” handle.

C. Plastic Ball Valve: Manufacturer and model as shown on drawings, or approved equal.

PVC Schedule 80 ball valve shall be MSS SP-12, full port (not reduced), rated to 235 psi, 140°F and supplied with Teflon TFE seat, EPDM seals and threaded ends (FNPT) with unions both sides.

D. Bronze Garden Valve: Manufacturer and model as shown on drawings, or approved equal. Garden Valve shall be heavy duty bronze body, bent nose, NSF/ANSI 37, FNPT, 125 psi, 180 deg F, heavy duty bronze body.

2.11 QUICK COUPLING VALVE

A. Quick Coupling Valve: Manufacturer and model as shown on drawings, or approved equal. Factory-fabricated, bronze or brass, two-piece assembly. Include coupler water-seal valve; removable upper body with spring-loaded or weighted, locking rubber-covered cap; hose swivel with ASME B1.20.7, 3/4-11.5NH threads for garden hose on outlet; and operating key.

2.12 FLOW SENSOR

A. Flow Sensor: Manufacturer and model as per drawings, or approved equal. Impeller based technology with digital output pulse proportional to flow in PVC mounting tee or saddle, flow range 0.25-15 feet per second (FPS), 240 PSI maximum working pressure,

HDPE impeller, with signal output up to 2000 feet using direct burial, twisted triad shielded cable.

2.13 AUTOMATIC MASTER VALVES

A. Bronze, Automatic Master Valve: Manufacturer and model as shown on drawings, or approved equal. Cast-bronze, normally open, dual chamber design provides no minimum flow capability, external plumbing of filter assembly, FNP, nylon reinforced EPDM diaphragm, 24volt solenoid, 0-300 GPM, 20-200 PSI.

2.14 AUTOMATIC CONTROL VALVES

A. Plastic, Automatic Control Valves: Manufacturer and model as shown on drawings, or approved equal. Glass-filled nylon body, normally closed, double beaded diaphragm seal, fabric-reinforced EPDM diaphragm and seat, captive bonnet screws, encapsulated solenoid with captive plunger, flow control, with optional pressure regulator.

2.15 SPRINKLERS

A. General Requirements: Designed for uniform coverage over entire spray area indicated at available water pressure.

B. Gear-Drive Rotor: Manufacturer and model as shown on drawings, or approved equal. Description: 1” female NPT inlet, ABS plastic pop-up body, patented automatic arc return, part or full circle in one model, non-strippable drive mechanism, optional stainless-steel riser, factory installed drain check, color coded nozzles, radius range 37’-71’, flow 3.8-31.5 GPM, recommended pressure 40-100 PSI

C. Gear-Drive Rotor: Manufacturer and model as shown on drawings, or approved equal. Description: 3/4” female NPT inlet, ABS plastic pop-up body, patented automatic arc return, part or full circle in one model, non-strippable drive mechanism, patented FloStop feature, factory installed drain check, color coded nozzles, radius range 17’-46’, flow 0.36-14.8 GPM, recommended pressure 20-100 PSI

D. Pop-Up Sprinkler Body: Manufacturer and model as shown on drawings, or approved equal. Description: ½” female NPT inlet, 6” pop-up height, ABS plastic pop-up body, co-molded wiper seal, heavy-duty spring, factory installed drain check, compatible with all female threaded nozzles, operational pressure range: 15-100 PSI.

E. Rotator Nozzle: Manufacturer and model as shown on drawings, or approved equal. Description: multi-trajectory rotating stream delivery system, female threaded nozzle, low precipitation rate, automatic matched precipitation, double-flush feature on nozzle, wind-resistant technology, full circle, adjustable arc 45°-360°, and specialty patterns, radius range 6’-35’, flow range 0.17-4.27 GPM, operating pressure 30-55 PSI.

2.16 ROOT ZONE WATERING SYSTEMS

A. Root Zone Watering System: Manufacturer and model as shown on drawings, or approved equal. Descriptions: Preassembled solid mesh tube with perforated top, internal baffles to divert water to all levels of root zone, durable locking cap, built in swing joint, pressure compensating bubbler, flow rates 0.25 and 0.50 GPM, pressure range 15-70 PSI, with fabric sleeve to prevent soil intrusion.

2.17 SPRINKLER RISERS

A. PVC Swing Joints: Manufacturer and model as shown on drawings, or approved equal. Description: Prefabricated PVC design, 3/4” and 1” MPT ends, rotating joint sealed with O-ring constructed that parts joined are moveable either so that one of the parts may be rotated relative to the other or so that one of the parts in addition to being rotated relative to the other may be moved on its own axis, in 8”, 12” and 18” lay arm lengths, pressure rated to 315 PSI.

B. Polyethylene (PE) Swing Joints: Manufacturer and model as shown on drawings, or approved equal. Description: Prefabricated swing assembly with 1/2” MPT unique swivel elbows on both ends and linear low density polyethylene tubing in 6” and 12” lay lengths, pressure rated to 150 PSI.

2.18 DRIP IRRIGATION SPECIALTIES

A. Drip Irrigation Control Zone Kit: Manufacturer and model as per drawings, or approved equal. Description: Factory assembled kit to include glass-filled nylon body remote control valve with fabric reinforced EPDM diaphragm, and 24volt solenoid, filter with 150 mesh stainless steel screen, and pressure regulator available in 25 PSI or 40 PSI. Kit shall come with four (4) flow ranges: low flow 0.5-15 GPM, medium flow 2-20 GPM and two (2) high flow kits 20-80 GPM and 20-100 GPM with operational pressure up to 120 PSI.

B. Blank Supply Tubing: Description: 0.600” x 0.700” thick-walled polyethylene, UV resistant, kink resistant, maximum operating pressure 80 PSI. Use with compression or threaded lock fittings, size per tubing size.

C. Distribution Tubing: .250” x .170” high quality polyethylene tubing, UV stabilized, maximum operating pressure 60 PSI. Use with ¼” barbed acetal fittings.

D. Line Source Drip Tubing: Manufacturer and model as shown on drawings, or approved equal. Description: 0.660" x 0.560" (17mm), surface or subsurface drip tubing with in-line pressure compensating emitters with check valve (check valve to hold water to a height of at least 6’), anti-siphon feature, emitter spacing 12” - 24”, flow range 0.4 to 0.9 GPH, pressure range 15 - 60 PSI. Use with barbed or threaded lock fittings, size per tubing size.

E. Point Source Emitter: Manufacturer and model as shown on drawings, or approved equal. Description: Pressure compensating 20 to 50 PSI, flow range 0.5 to 6.0 GPH, color-coded by flow, self-flushing diaphragm, self-piercing ¼" barb. Use with ¼" distribution tubing.

F. Air/Vacuum Relief Valves: Manufacturer and model as per drawings, or approved equal. Description: UV protected housing, corrosion-resistant internal parts, operating range up to 80 PSI, release air pockets without premature closure, leak free closure after release.

G. Automatic Flush Valve: Manufacturer and model as per drawings, or approved equal. Description: Flushes debris automatically at every system startup, reversible diaphragm to coordinate with low flows 2-5 GPM or high flows 5-12 GPM, pressure range up to 60 PSI, with 17 mm barbed connection or ½" MPT connection.

H. Drip Tubing Fittings: Fittings shall be as recommended by tubing manufacturer.

1. Lock Fittings: 1/2" polyethylene tubing and line source drip tubing having an inside diameter range from .520" to .620" made with UV resistant glass reinforced polypropylene with large threaded swivel connectors, operating pressure 0-60 PSI.

2. Barbed Fittings: 17 mm Acetal fitting to be used with vinyl and PE tubing with dual barb design, operating range up to 100 PSI.

3. Compression Fittings: polyethylene compression fitting for tubing sizes .680" to .704" OD.

2.19 CONTROLLER

A. GENERAL

1. The controller shall be a full-featured commercial-industrial product for the purpose of irrigation management and monitoring of control valves, flow, and sensors, via traditional wire or two-wire decoder connections.

2. Controller manufacturer and model shall be as shown on drawings, or approved equal.

3. Controller shall have 12-255 station capability, 6 flow sensor inputs, 6 power/master valve outputs, 32 automatic programs with 10 start times each, block function to group stations, local weather sensor input, station flow "learned" mode or manual input, real-time flow monitoring, flow management to optimize watering at safe pipe velocities, true calendar date OFF programing, seasonal adjust settings in 1% to 300% increments, conditional response programing, two level user management password protection, optional plug-in communication modules for cloud or network control, optional plug-in

communication modules for Wi-Fi/LAN/CELL, detailed alarm logs, non-water window programing, hand-held remote compatible.

4. Controller shall be enclosed in a stainless steel, weather resistant, wall mount enclosure or as a drop-in panel for installing in a top-entry enclosure.

B. CONVENTIONAL CONTROLLER

1. The controller shall have a 12-station base unit with 6-station expansion modules up to 54-stations, works with 24volt solenoids using single conductor direct burial wire, simultaneous station operation of up to 14 solenoids, station output 0.8 amp each, grey metal cabinet for interior wall mount, stainless steel cabinet for exterior wall mount, drop-in panel for top-entry exterior stand-alone enclosure.

C. DECODER CONTROLLER

1. The controller shall have a 75-station base unit with 75-station expansion modules up to 225-stations, works with 24volt solenoids with decoder modules using 2-wire twisted pair cable, up to 3 two-wire paths per output module, simultaneous station operation of up to 30 solenoids, up, grey metal cabinet for interior wall mount, stainless steel cabinet for exterior wall mount, drop-in panel for top-entry exterior stand-alone enclosure, diagnostics for decoder inventory, wire tracker and solenoid finder.

2. Decoders for Valves and Sensors shall be compatible with controller, 1,2,4, and 6 station versions, sensor decoders, field programmable accepts station number directly, can be programmed before installation at the controller interface or wireless programming after installation using the two-wire path, integrated surge protection, color coded wiring connections. Maximum distance from decoder to solenoid is 150’.

3. Hand-Held Decoder Programmer shall be able to program or re-program decoder stations, in order of skip stations for future expansion, sensor test function, built in multimeter, communicates with decoder through wireless electromagnetic induction, USB or battery power, fused test leads for unpowered decoder functions, with carry case.

4. Universal Decoder Stake shall be 10.8” to raise decoder off ground in end-up position for convenient access and wireless programming without removal, sturdy construction made of recycled materials, include zip ties to secure decoder to stake.

2.20 CONTROLLER WIRE, CABLE, AND ELECTRIC BOXES

A. Conventional Control, Common, and Spare Wire:

1. Single conductor insulated wire size 14 AWG, nominal O.D. 0.154 inches, soft drawn bare copper meeting ASTM B-3, utilizing low density high molecular weight polyethylene insulation, suitable for direct burial applications for operating temperatures up to 60°C. Listed by UL or ETL or CSA.

2. Wire insulation shall be color coded black or red for control wire. Common wire shall be white. Spare wire shall be a color different from control and common wires.

B. 2-Wire Decoder Cable:

1. Jacketed cable containing two wires, single conductor, twisted, suitable for direct burial, for operation up to 600 volts, and temperatures up to 60°C. Soft drawn bare copper meeting the requirements of ASTM specification B-3 or B-8. Insulation shall be low density high molecular weight polyethylene and a thickness of 0.045", per Paige Electric specification P7079D. The two conductors (blue and red) shall be twisted with a minimum lay of 4".

2. 14 AWG Decoder Cable for up to 10,000’ with decoders. 12 AWG Decoder Cable for up to 15,000’ with decoders.

3. Jacket cover shall be a different color for each wire path.

C. Wire Splices

1. Wire splices shall consist of R/Y+ connector with steel spring and flame retardant insulator, high impact UV-resistant light blue polypropylene tube, 3.7” length, 1” diameter, prefilled with moisture-resistant grease 711B, C UL US listed, UL Standard 486D, File No. E102356, listed for use in wet, damp direct bury and submersible locations with UF type cable, maximum voltage rating: 600V.

D. Electric Boxes

1. 14" x 19" body shall be gray, tapered and has a minimum wall thickness of 0.187". The body has a double wall at the top cover seat area with a minimum thickness of 0.200". The cover shall be gray, seat area has 18 structural support ribs on the underside of the seat, each with a minimum thickness of 0.200". The bottom of the body has a 0.500" flange. The 14" x 19" cover has an average thickness of 0.200". The valve box has a 3/8" 304 Brass nut for the bolt-down as a standard feature.

2.21 ENCLOSURE FOR CONTROLLER

A. Top entry, vandal and weather resistant, stainless-steel enclosure, 16"W, 38"H, 15.5"D, louvered main housing with filter screens, removable stainless-steel tray and backboard for mounting electronics. Top entry lid includes a stainless-steel piano hinge and a three-point locking mechanism at the front with two gas springs to assist with opening and closing. A cam style lock secures the flush mounted front entry door and includes

provisions for a padlock. A continuous drainage channel around all sides of door face provides a water-tight seal with the tear drop shaped, hollow center, thermoplastic door seal. The inside door also provides adequate storage for instructions or plans. This enclosure is NEMA 3R rated and UL 508A listed.

B. Enclosure shall be equipped with a thermostatically controlled fan, manufacturer same as enclosure.

C. Enclosure shall be equipped with a vandal resistant rain witch enclosure, manufacturer and model as shown on drawings, or approved equal.

D. Concrete Base: Reinforced precast concrete four (4) inches thick, and six (6) inches greater in each direction than overall dimensions of controller. Include opening for wiring.

2.22 BOXES FOR VALVES

A. GENERAL: Manufacturer and model as shown in drawings, or approved equal. High-impact, high-density, injection-molded structural foam polyethylene construction with a melt index between 10-12, overlapping covers prevent dirt and grass from settling in between body and cover, UV inhibitors prevent discoloration and cracking, corrugated sidewalls and reinforced lids.

B. PLASTIC BOXES

1. 6" round body is tapered and has a minimum wall thickness of 0.200". The body has a double wall at the top cover seat area with a minimum thickness of 0.130". The bottom of the body has a 0.250" flange. The 6" round cover has an average thickness of 0.187".

2. 10" round body is tapered and has a minimum wall thickness of 0.250". The cover seat area has 8 structural support ribs on the underside of the seat, each with a minimum thickness of 0.250". The bottom of the body has a 0.500" flange. The 10" round cover has an average thickness of 0.300". The valve box has a 3/8" 304 Brass nut for the bolt-down as a standard feature.

3. 14" x 19" body is tapered and has a minimum wall thickness of 0.187". The body has a double wall at the top cover seat area with a minimum thickness of 0.200". The cover seat area has 18 structural support ribs on the underside of the seat, each with a minimum thickness of 0.200". The bottom of the body has a 0.500" flange. The 14" x 19" cover has an average thickness of 0.200". The valve box has a 3/8" 304 Brass nut for the bolt-down as a standard feature.

4. 13" x 24" body is tapered and has a minimum wall thickness of 0.270". The body has a double wall at the top cover seat area with a minimum thickness of 0.270". The cover seat area has 18 structural support ribs on the underside of the seat, each with a minimum thickness of 0.250". The bottom of the body has a 1.000"

flange. The 13" x 24" cover has an average thickness of 0.320". The valve box has a 3/8" 304 Brass nut for the bolt-down as a standard feature.

5. Plastic valve box and lid shall be green when installed in turf and bark mulch areas. Plastic box and lid shall be tan when installed in decomposed granite area.

C. Valve Box Drainage Backfill: Cleaned gravel or crushed stone, extending 2” greater in each direction than overall dimensions of valve box.

D. Valve Box Wire Mesh: Wire mesh shall be twenty-three (23) gauge, one quarter (1/4) inch square, hot-dipped galvanized woven or welded mesh, heavy zinc or PVC coating, corrosion resistant, extended 2” greater in each direction than overall dimensions of valve box.

2.23 MISCELLANEOUS SPECIALTIES

A. Pressure Gauges: ASME B40.1. Two (2) inch diameter dial, glycerin filled stainless steel case shall be ASME B40.100 compliant with 200 psi dial and one-quarter (1/4) inch NPT bottom outlet.

2.24 MARKING PRODUCTS

A. Mainline Detectable Marking Tape: Detectable marking tape shall be one hundred (100) percent virgin polyethylene, acid/alkaline and corrosion resistant, 5.0mil thick, five-ply composition, blue in color with continuous marking “Caution: Irrigation Water Line Buried Below”, with 2.0mil solid aluminum foil core, encapsulated within 2.55mil polyethylene backing. Tape width shall be per manufacturer’s specification for mainline pipe size.

B. Valve Identification Tag: Manufacturer and model as shown on drawings, or approved equal. Valve identification tags shall be polyurethane Behr Desopna, with a reinforced attachment hole, two and one quarter (2-1/4) inch by two and three quarter (2-3/4) inch in size, yellow in color with double sided stamped controller and valve designation.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Site Verification of Conditions:

1. Contractor shall be acquainted with all site conditions. Should utilities or other work not shown on the plans be found during excavations, Contractor shall promptly notify Landscape Architect for instructions as to further action. Failure to do so will make Contractor liable for any and all damage arising from operations subsequent to discover of such utilities not shown on plans.

2. Contractor shall take necessary precautions to protect site conditions. Should damage be incurred Contractor shall repair damage to its original condition or furnish and install equal replacement.

3.2 LAYOUT

A. Consideration will not be given to design changes until after award of contract.

B. Lay out work as closely to that shown on the Contract Drawings as possible. Contract Drawings are diagrammatic in nature. Adjust layout as necessary to accommodate actual site conditions. Locate pipe and valves shown under paving in adjacent planting area.

C. Full and complete coverage is required. Contractor shall make minor adjustments to layout as required to assure full and complete coverage. When such adjustments require exceeding radius limitations shown on irrigation legend, contact Landscape Architect for direction.

D. Substitutions for smaller pipe sizes will be not be accepted.

E. Contact Landscape Architect forty-eight (48) hours in advance for layout review of points of connection, backflow and controller location, mainline routing when not as shown on drawings, gate valve and remote control valve locations.

3.3 EARTHWORK

A. Perform excavation as required for installation of work included under this Section. Restore all surfaces, existing underground installations, etc., damaged or cut as a result of excavations, to their original condition.

B. Should utilities not shown on the plans be found during excavation, promptly notify Landscape Architect for instructions as to further action. Failure to do so will make Contractor liable for any and subsequent discovery of such utilities. Indicate such utility crossings on the Record Drawings promptly.

C. Dig trenches wide enough to allow a minimum of 4-inches between parallel pipe lines. Trenches shall be of sufficient depth to provide minimum cover from finish grade as follows:

1. Over pipe on pressure side of irrigation control valve, control wires and quick coupling valves: 24 inches.

2. Over pipe on non-pressure side of irrigation control valve: 18 inches.

3. Over pipe on sleeves: 24 inches.

4. Over pipe on drip tubing: 4 inches

D. Trenching within the drip-line of existing trees shall not employ the use of mechanical trenching devices. Hand dig without severing roots which exceed 1-1/2" in diameter. Notify the Landscape Architect immediately if site conditions prohibit such action.

3.4 PIPING INSTALLATION

A. General:

1. Location and Arrangement: Drawings indicate location and arrangement of piping systems. Install piping as indicated unless deviations are approved on Coordination Drawings.

2. Clean all pipes and fittings of dirt and moisture before assembly.

3. Install piping free of sags and bends.

4. Install groups of pipes parallel to each other, spaced to permit valve servicing.

5. Install fittings for changes in direction and branch connections.

6. Install unions on both sides of valves.

7. Lay piping on solid sub-base, uniformly sloped without humps or depressions.

8. Install ductile-iron piping according to AWWA C600.

9. Install PVC piping in dry weather when temperature is above 40 deg F. Allow joints to cure at least 24 hours at temperatures above 40 deg F before testing.

10. Install pressure mainline pipes a minimum of 5 feet from tree locations to avoid conflict with mature root systems.

B. Solvent-Welded Joints and Lubricants for PVC Pipes:

1. Use primer, solvents, lubricants and methods as recommended by fitting and pipe manufacturers.

2. Cure joint a minimum of one hour before applying any external stress on the piping and at least twenty-four (24) hours before placing the joint under water pressure.

C. Threaded Joints for Plastic Pipes:

1. Use Teflon tape on the threaded PVC fittings.

2. Use strap-type friction wrench only. Do not use metal-jawed wrench.

3. When connection is plastic to metal, PVC Schedule 80 male adaptors shall be used. The male adaptor shall be hand tightened, plus one turn with a strap wrench. Joint compound shall be Teflon tape or approved equal.

D. Laying of Pipe:

1. Pressure mainline pipes shall be bedded in at least 2-inches of sand with 2-inches of sand cover over top of piping.

2. Install detectable marking tape along entire length of pressure mainline piping with a maximum of 12-inches cover.

3. Pressure mainline pipe changes in direction shall be made only using 45° elbows.

4. Non-pressure lateral pipes shall be bedded in at least 2-inches finely divided material with no rocks or clods over 1-inch diameter to provide a uniform bearing.

5. Pipe shall be snaked from side to side of trench bottom to allow for expansion and contraction as recommended by pipe manufacturer. One additional foot per 100 feet of pipe is the minimum allowance for snaking.

6. PVC Pipe shall not be laid when there is water in the trench.

7. Install piping in sleeves under parking lots, roadways, sidewalks, and walls.

8. Cut plastic pipe with PVC pipe cutters or hacksaw to ensure a square cut. Remove burrs at cut ends prior to installation to ensure that a smooth unobstructed flow will be obtained.

9. All plastic-to-plastic joints shall be solvent-weld joints. Only primer and solvents recommended by the pipe manufacturer shall be used. Install plastic pipe and fittings as outlined and instructed by pipe manufacturer.

10. It shall be the Contractor's responsibility to make arrangements with the pipe and fitting manufacturers for any field assistance that may be necessary. Contractor shall assume full responsibility for the correct installation.

3.5 EQUIPMENT INSTALLATION

A. Gate Valves: Group valves together and locate in shrub planters where possible. Install in valve casing with valve box flush with finish grade.

B. Irrigation Control Valves: Install control valves in valve boxes where shown on drawings and group together where practical in groups not to exceed three valves per location unless otherwise shown on drawings. Install in shrub planters wherever possible. Place no closer than 12-inches and perpendicular to walk edges, buildings, and

walls. Valve boxes shall be flush with finish grade. Install valve identification tags as per Drawings.

C. Pressure-Reducing Backflow Device: Install above ground as per manufacturer's recommendation. Install with backflow enclosure and weather resistant cover. Contractor shall be responsible to have valve certified within seven (7) days of connection to potable water source. Contact locale water agency for approved list of certification providers.

D. Quick Coupling Valves: Install quick coupling valves on a swing joint assembly as detailed on the Drawings. Place no closer than 12-inches and perpendicular to walk edges, buildings, and walls. Valve boxes shall be flush with finish grade.

E. Sprinkler Heads

1. Install sprinklers after hydrostatic test is completed.

2. Place all rotary pop-up sprinkler heads in lawn areas on swing joints as detailed on Drawings with top of heads 1-Inch above finish grade. Place part-circle rotary pop-up sprinkler heads 8-inches from edge of and flush with top of adjacent walks, header boards, curbs, mowing bands, or paved areas at time of installation. Install rotary sprinklers on a swing joint assembly as detailed.

3. Install sprinkler heads on a swing joint assembly as detailed on the Drawings.

F. Root Zone Watering System

1. Install root zone watering systems using preinstalled fabric sleeve and swing joint to PVC fitting prior to attaching to lateral line.

2. After placing tree or shrub in a prepared planting hole, space the root one watering system evenly around the root ball and flush with finished grade. Each tree or shrub should have a minimum of two units.

3. Backfill the hole around the root zone watering system and compact to same relative density as surrounding area.

G. Drip Irrigation Specialties

1. Install freestanding emitters on distribution tubing riser to mounting height indicated.

2. Install drip supply tubing with 4 inches of cover.

3. Install in line emitter tubing as shown on drawings with 4 inches of cover.

4. Install vacuum relief valves in piping at high points in system and in control-valve boxes. Set valve boxes flush to finish grade.

5. Install flush valves in valve boxes with drain rock per detail. Set valve boxes flush to finish grade.

H. Automatic Controller:

1. Install per local code and manufacturer's latest printed instructions.

2. Connect remote control valves to controller in clockwise sequence to correspond with station setting beginning with stations 1, 2, 3, etc.

3. Affix controller name (i.e. "Controller A") on side of controller cabinet door with letters minimum of 1 inch high.

4. Affix a non-fading copy of irrigation diagram to cabinet door below controller name. Seal irrigation diagram between two sheets of 20 mil (minimum) plastic.

5. Irrigation diagram shall be a reduced copy of the as-built drawing and shall show clearly all valves operated by the controller, showing station number, valve size, and type of planting irrigated.

6. Install earth ground as shown on Drawings and as recommended by controller manufacturer.

I. Control Wiring

1. Install control wires in conduit with piping in common trenches wherever possible. Lay to the side of pipe line. Provide 24 inch service looped at valves neatly coiled along interior of valve box.

2. Use approved wire splices at remote control valves and at line splices Line splices will be allowed only on runs of more than 500 feet. Splices at valves shall be installed within valve boxes. Line splices shall be installed in electric box.

3. Install pull boxes at a maximum of 150 feet and or at every 5th turn in conduit direction.

4. Install field ground rods and surge protection as recommended by controller manufacturer.

J. Closing of Pipe and Flushing of Lines:

1. Cap or plug all openings as soon as lines have been installed to prevent entrance of materials that would obstruct the pipe. Leave in place until removal is necessary for completion of installation.

2. Thoroughly flush out all water lines before installing heads, valves and other equipment.

3. Test as specified.

4. Upon completion of testing, complete assembly and adjust sprinkler heads for proper distribution.

K. All sprinkler heads and quick coupling valves shall be set perpendicular to finished grades unless otherwise designated on the Drawings, or otherwise specified. Sprinkler heads adjacent to existing walls, curbs and other paved areas, shall be set to grade. Sprinkler heads which are to be installed in lawn areas where the turf has not yet been established shall be set 1-inch above the proposed finish grade. Heads installed in this manner will be lowered to grade when the turf is sufficiently established to allow walking on it without appreciable destruction. Such lowering of heads shall be done by Contractor as part of the original contract with no additional cost to the Owner.

3.6 BACKFILL AND COMPACTING:

A. After system is operating and required tests and inspections have been made, backfill excavations and trenches with clean soil free of debris.

B. Backfill for all trenches, regardless of the type of pipe covered, shall be compacted to minimum 95 percent density under pavements, and 85 percent under planted areas.

C. Compact trenches in areas to be planted by thoroughly tamping backfill. Flooding and jetting shall not be used.

D. Dress off all areas to finish grades.

3.7 FIELD QUALITY CONTROL

A. Perform tests and inspections. Notify the Landscape Architect a minimum of forty-eight (48) hours prior to performing pressure test and inspections.

B. Perform hydrostatic tests when welded PVC joints have cured per manufacturer's instructions.

1. Pressurized Mains:
   a. Completely install mains, gate valves, and control valves. Do not install laterals.
   b. Fill all lines with water.
   c. Pressurize the main to 120 PSI. Monitor gauge for pressure loss for four (4) hours. Maximum allowable loss over four (4) hour period - 2 psi for piping systems over 100 feet.
   d. Leave lines and fittings exposed throughout testing period.
   e. Leaks resulting from tests shall be repaired and tests repeated until the system passes.
   f. Test all gate valves for leakage.
   g. Contractor must provide necessary pump and equipment required for test.

2. Non-Pressure Laterals:
   a. Test piping after laterals and risers are installed and system is fully operational.
   b. Leave trenches open to detect possible leaks.

C. Submit written requests for inspections to the Landscape Architect at least forty eight (48) hours prior to anticipated inspection date.

D. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.

1. Operational Test: After electrical circuitry has been energized, operate controllers and automatic control valves to confirm proper system operation.

2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

E. Any irrigation product will be considered defective if it does not pass tests and inspections.

F. Prepare test and inspection reports.

3.8 ADJUSTING

A. Adjust settings of controllers.

B. Adjust automatic control valves to provide flow rate at rated operating pressure required for each sprinkler circuit.

C. Adjust sprinklers and devices so they will be flush with, or not more than 1/2 inch above, finish grade.

3.9 CLEAN UP

A. Clean up shall be performed as each portion of work progresses. Remove all debris from the entire work area and remove from site. All walks and paving shall be broomed or washed down, and any damage or stains sustained due to the work shall be repaired to conditions acceptable to the Landscape Architect.

3.10 INSPECTION SCHEDULE

A. The Contractor shall be responsible for notifying the Landscape Architect forty-eight (48) house in advance for the following inspections:

1. Layout review

2. Open trench prior to pipe installation – include base layer

3. Mainline pressure test – test shall be conducted with backflow preventor, quick couplers and control valves in place and prior to backfilling.

4. Sprinkler coverage test – A coverage test with Owner's Representative shall be performed after a) the irrigation system is completed, b) an irrigation water audit has been performed by a Certified Irrigation Auditor (see item 3.12), c) audit recommended adjustments to the irrigation system have been made and d) programming of controller has been completed by contractor.

5. Substantial Completion

6. Final Inspection

B. The Contractor shall be responsible to be prepared for inspections including having updated record drawings available for review, correcting previously identified punch list items and adequately preparing the site for inspection.

C. In the event the Contractor calls for an inspection without having updated field record drawing available for review, correcting previously identified punch list items, or adequately preparing the site for inspection, the Contractor shall be responsible for compensating the Landscape Architect time and materials at current billing rates per hour, plus transportation costs.

1. In the event that Landscape Architect submits an invoice for compensation to the Contractor, said invoice shall be paid in full prior to scheduling subsequent inspections.

3.11 SUBSTANTIAL COMPLETION

A. The Contractor shall request inspection once the irrigation system is operational, adjustments have been made and site has been cleaned.

B. The Contractor shall submit written request for Substantial Completion inspections to the Landscape Architect at least forty-eight (48) hours prior to anticipated inspection date.

3.12 IRRIGATION WATER AUDIT

A. Contractor shall be responsible to provide an irrigation water audit after Substantial Completion and prior to Final Acceptance.

B. The irrigation water audit shall be performed by a Certified Irrigation Auditor and in accordance with the latest edition of the California Code of Regulations, Title 23, Division 2, Chapter 2.7, Model Water Efficient Landscape Ordinance.

C. The Contractor shall conduct an Irrigation Water Audit with catch can results, using a Certified Irrigation Auditor after the final field observation has been completed, and all

irrigation components are installed in accordance with the plans and specifications and the irrigation system is accepted by the Owner.

D. The Irrigation Water Audit shall be conducted in accordance with the latest California Code of Regulations, Title 23, Division 2, Chapter 2.7, Model Water Efficient Landscape Ordinance.

E. Contractor to provide verification to Owner's Representative that auditor has been provided irrigation plans and irrigation specifications prior to performing audit.

F. Contractor shall incorporate Irrigation Water Audit results while programming Irrigation Controller for specific control zones including but not limited to calculations for Zone Flow, Precipitation Rates, Irrigation Efficiency and Distribution Uniformity (DU). The acceptable DU range shall be as determined by industry standards as supplied, and directed by the manufacturer of each spray, rotor, drip emitter installed.

G. The Irrigation Water Audit shall be included in a binder complete with:
   1. Cover Sheet with Location, Date, Owner and Certified Irrigation Auditor contact information.
   2. Irrigation System Evaluation Checklist.
   3. Sprinkler Evaluation Data Sheet for each zone. Combining results of more than one valve is not allowed.
      a. Catch can results shall have locations mapped on the irrigation plan at the correct scale; map shall correlate each catch can to the Data Sheet.
   4. Other information as required by latest California Code of Regulations, Title 23, Division 2, Chapter 2.7, Model Water Efficient Landscape Ordinance.
   5. Recommendations to correct deficiencies noted in report.

H. Contractor to correct deficiencies noted in audit prior to coverage test. Contractor to provide additional catch can results after deficiencies have been corrected and prior to coverage test.

I. Contractor shall be responsible to make recommended adjustments to the irrigation system based on Irrigation Water Audit Report and requirements in specifications at no additional cost to owner when adjustments required are due to irrigation deficiencies.

J. Submit Irrigation Water Audit with Close-Out Documents.\

K. The irrigation water audit shall be included in a binder with:

   1. Cover sheet with location, date, owner and auditor contact information

   2. Irrigation system evaluation checklist

   3. Sprinkler evaluation data sheet for each control zone.

4. Other information as required by the latest edition of Model Water Efficient Landscape Ordinance

3.13 DEMONSTRATION

A. The Contractor shall schedule an irrigation demonstration with Owner after the system has been installed and Substantial Completion corrections have been completed.

B. The Demonstration shall be no less than two (2) hours and shall include the following:

1. Operation of controller system including programming demonstration, review of flow monitoring features and explanation of alerts and alarms.

2. Operation of hand-held remote equipment including field operation of system valves.

3. Operation of hand-held field decoder programmer including programing sample decoder.

4. Calibration of flow sensor and running automatic “learned” flow test.

5. Review of troubleshooting checklist for system equipment including controller, sensors, valves, filters, decoders, sprinklers and nozzles.

3.14 CLOSE OUT DOCUMENTS AND EQUIPMENT

A. Close Out Documents shall be submitted to the Landscape Architect a minimum of two (2) weeks prior to scheduling Final Inspection.

1. Record Drawings – full size set of irrigation drawings including revisions and dimensions representing the installed irrigation system. Record Drawings must be neat and legible and of sufficient quality to allow black and white reproduction of the original to be clear. Once approved by the Landscape Architect, the Contractor shall submit two (2) sets on bond prior to Final Acceptance.

2. Controller Chart – provide two (2) charts, 11 inches by 17 inches for each controller. Place one copy inside the controller enclosure. Place the other copy in Operation and Maintenance Manual. The controller chart shall be a color-coded schematic representation of the irrigation system with each valve zone identified by a unique color. The controller chart shall include a legend identifying the color, valve number, plant type and controller programming schedule including days of week and run times. Once approved by Landscape Architect, the Contractor shall submit two (2) copies hermetically sealed between two (2) pieces of 10 mil plastic.

3. Operation and Maintenance Manual – provide two (2) binders including operating instructions, parts list and breakdown diagram for each type of equipment installed, complete copy of "approved" irrigation submittals, controller chart, irrigation schedule for each valve zone, Irrigation Audit report, signed acceptance letter from Owner for equipment received, contractor contact information, local manufacturer's representatives contact information for equipment installed, signed Contractor Guarantee and Certificate of Insurance.

B. Equipment to be Furnished – The Contractor shall deliver to Owner all tools and equipment called for on the plans and described herein.

1. Two (2) sets of keys for locking the controller cabinet and backflow enclosure.

2. Two (2) spare valves for each type and size installed

3. Two (2) decoders for each type installed

4. Five (5) sprinklers for each type installed

5. Five (5) complete nozzle sets for each type installed

6. One hundred (100) feet of drip tubing for each type installed

7. Ten (10) drip emitters for each type installed

8. Two (2) sets of special tools for removing, disassembly and adjusting irrigation equipment installed.

9. Two (2) valve opening keys

10. Two (2) quick coupler keys and hose swivels

11. Two (2) hand held remotes control transmitters and cases

12. Two (2) hand held decoder programmers

C. Guarantee – The Contractor shall include a signed letter of warranty for all materials installed and workmanship for a period of one (1) year from final acceptance.

3.15 FINAL INSPECTION

A. The Contractor shall request Final Inspection after all corrections from previous inspections are complete, demonstration of the irrigation system is complete, approved close out documents are received, and equipment to be furnished is received by Owner.

B. The Contractor shall submit written request for Substantial Completion inspection to the Landscape Architect at least forty-eight (48) hours prior to anticipated inspection date.

1. Final Inspection shall include review of outstanding corrections identified during Substantial Completion inspection.

C. The Landscape Architect shall issue to Owner a Certificate of Final Acceptance once all outstanding corrections identified during the final inspection have been completed.

END OF SECTION 328400

SECTION 331100
WATER UTILITY DISTRIBUTION PIPING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Locate and verify pipe size at water system connections.

B. Provide and install water system pressure pipe, fittings, and appurtenances.

C. Provide and install all water system appurtenances, i.e. post-indicator valve(s), fire department connection(s), backflow preventer(s), hose bibb(s), fitting(s), valves(s), etc.

D. Provide and install concrete thrust blocks.

E. Connect new water system to existing service lines.

F. Disinfection and testing of new water line.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including the Division 01 Specification Sections apply to this Section.

B. Related Sections include the following:
1. Trenching, Backfilling and Compaction – Section 312316.

1.3 SUBMITTALS

A. In accordance with Administrative Requirements:
1. Submit choice of pipe, fittings, and appurtenances for review prior to ordering.

1.4 REFERENCES

A. California Plumbing Code (CPC), latest edition.

B. California Fire Code (CFC), latest edition.

C. National Fire Protection Association (NFPA) Standard for the Installation of Private Fire Service main and their Appurtenances, latest edition.

D. Local Municipal and/or County Standard requirements as applicable.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Water pipe shall be delivered, handled, and stored in a way that prevents damage to the pipe and the entry of foreign materials into the pipe.

B. Regardless of cause, damaged pipe shall be replaced with new products at the expense of the Contractor.

PART 2 - PRODUCTS

2.1 WATER SERVICE PIPE AND FITTINGS

A. All domestic water piping 3-inch diameter and smaller shall be PVC Sch. 40, with solvent cement fittings compatible with the pipe.

B. All domestic water piping 4-inch in diameter shall be PVC C900, DR18.

C. All fire and domestic water piping 6-inch diameter and larger shall be PVC C900, DR14.

D. All recycled/reclaimed water piping 3-inch in diameter and smaller shall be purple PVC Sch. 40, with solvent cement fittings compatible with the pipe.

2.2 WATER SYSTEM APPURTENANCES

A. All domestic water line valves shall be bronze body ball valves centered in a valve box with a PVC riser.

B. All fire water line valves shall be resilient wedge, non-rising stem suitable for 200 psi minimum working pressure centered in a valve box with a PVC riser.

C. Domestic and fire water valve boxes shall be model G05 as manufactured by Oldcastle Infrastructure, or approved equal with lid marked "WATER."

D. All recycled/reclaimed water line valves shall be bronze body ball valves centered in a valve box with a purple PVC riser. Valve handle shall be purple and lettered "RECLAIMED WATER."

E. Recycled/reclaimed water valve boxes shall be model G05, color coded purple, as manufactured by Oldcastle Infrastructure, or approved equal with lid marked "RECLAIMED WATER."

F. Post-indicator valves, fire department connections, backflow preventers shall be the model indicated on the plans per the drawing details and owner's approved list and standard drawings, or approved equal.

PART 3 - EXECUTION

3.1 GENERAL

A. Construction of the private domestic and recycled/reclaimed water system shall conform to the requirements of the CPC.

B. Construction of the private fire water system shall conform to the requirements of the CFC and NFPA 24, and shall be inspected during installation by the local fire authority.

3.2 POTHOLING AT CONNECTION POINTS

A. The exact location and size of existing water service lines is unknown and is depicted on the plans based upon the best information available.

B. The Contractor shall pothole in the vicinity of each connection point to verify the exact location and size of the existing water line. That information shall be presented in the form of a field sketch through the RFI process, for confirmation by the Engineer that the line as located is adequate to serve the proposed buildings.

3.3 PIPE DISTRIBUTION AND HANDLING

A. Pipe distribution shall not take place too far in advance of laying operations.

B. Pipe shall be handled carefully to avoid damage. Pipe handling by mechanical equipment shall be in accordance with the pipe manufacturer's recommendations.

C. The spigot ends of pipes and fittings that utilize polyvinyl chloride or polyurethane factory applied flexible compression joints shall not rest on the ground or pavement.

D. All pipe, fittings, and valves shall be carefully lowered into the trench by means of a derrick, ropes or other suitable tools or equipment, in such a manner as to prevent damage to pipe materials, protective coatings and linings. Under no circumstances shall pipe materials be dropped or dumped into the trench.

3.4 PIPE LAYING

A. No pipe shall be laid in water or when trench conditions are unsuitable to allow performing the job in a professional manner.

B. Pipe shall be laid with bell ends facing in the direction of laying, and shall progress uphill.

C. Pipe deflections, where permitted, shall not exceed that recommended by the pipe

manufacturer.

D. Pipe and fittings which do not allow sufficient space for joints shall be removed and replaced with pipe and fittings of proper dimensions.

E. Every precaution shall be taken to prevent foreign material from entering the pipe. If necessary, a heavy, tightly woven canvas bag of suitable size shall be placed over each end and left there until the connection is to be made to the adjacent pipe. During laying operations, no debris, tools, clothing or other materials shall be placed in the pipe. If foreign materials do enter the pipe, they shall be removed continuously as work progresses.

F. At times when pipe laying is not in progress, the open ends of laid pipe shall be closed by a watertight plug.

G. Wherever the jointing material specified is cement, two or more lengths of pipe shall be in place ahead of each joint before such joint is finished.

H. Where PVC, SCH 40, pipe is used, pipe ends shall be lightly sanded and wiped just prior to making the joint to assure good adhesion.

I. The Contractor is advised that the County Fire Department typically inspects private fire main testing and generally requires that testing be performed with exposed joints and with the pipe restrained with partial backfill over the center of the pipe.

3.5 FLUSHING AND TESTING

A. Private Potable Water System
   1. The system shall be flushed with potable water until only potable water appears at the outlet point.
   2. The system shall be disinfected in accordance with Section 609.9 of the CPC.
   3. The system shall be hydrostatically tested in accordance with Section 609.4 of the CPC.

B. The private fire mains shall be flushed and tested in accordance with NFPA 24:
   1. Pipes shall be flushed at the design flow rate of the system or at a rate which produces a velocity in the pipe of 10 feet per second, whichever is greater.
   2. The systems shall be hydrostatically tested at not less than 200 psi for two hours. Leakage at the joints shall not exceed two quarts per hour per 100 gaskets or joints.
   3. Testing shall be observed by the local fire authority.

C. Tests shall be made by the Contractor in the presence of the authority having jurisdiction and the Owner’s Representative.

3.6 CONNECTIONS TO EXISTING SERVICES AND MAINS

A. Contractor shall coordinate with city; city to make connections to existing mains where indicated on the plans. Said connections shall be made after new water pipe is flushed and tested in accordance with this specification. The Owner's Representative and County Inspector shall observe all tests.

B. Sawcut, remove, and repair existing pavements as noted on plans.

3.7 CLEAN UP

A. Remove all debris and stains resulting from the work of this section.

END OF SECTION

SECTION 333000
SANITARY SEWERAGE UTILITIES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Locate and verify invert elevation of existing pipe at proposed point of connection.

B. Provide and install gravity sewer pipe.

C. Provide and install sewer cleanouts.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including the Division 01 Specification Sections, apply to this Section.

B. Related Sections include the following:
   1. Trenching, Backfilling and Compaction - Section 312316

1.3 SUBMITTALS

A. In accordance with Submittal Requirements specified:
   1. Submit choice of pipe and appurtenances for review prior to ordering.

1.4 REFERENCES

A. California Plumbing Code (CPC), latest edition.
B. Published owner standards

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Sewer pipe and appurtenances shall be delivered, handled, and stored in a way that prevents damage to the pipe and prevents entry of foreign materials into the pipe.

B. Regardless of cause, damaged pipe and appurtenances shall be replaced with new products at the expense of the Contractor.

1.6 GRADE AND ALIGNMENT CONTROL

A. General
   1. Necessary installation procedures, as needed to ensure pipes are installed at the location and grade staked in the field, shall be used.

B. Method
   1. One of the following methods shall be utilized to control grade and alignment:
      a. Batter boards set at 25' intervals with a string line set over at least three batter boards.
      b. Electronic ‘Laser’ beam set at manhole locations or grade breaks (with at least three grade points shall be checked to verify the set grade).
      c. Survey instrument set at cleanout to site, between cleanouts at the set grade.

C. Equipment
   1. The Contractor shall furnish all equipment necessary to install and inspect the pipe installation. Grade rod shall be held to a minimum in all cases.

PART 2 - PRODUCTS

2.1 GRAVITY SEWER PIPE AND SERVICE LATERALS

A. Sewer pipe 6 inches in diameter and smaller shall be PVC, SDR 26 with gasketed joints, or approved equal.

B. Pipe shall be green in color.

2.2 CLEANOUTS

A. As shown and detailed on the Drawings.

B. Lids shall be concrete, marked "sewer".

PART 3 - EXECUTION

3.1 GENERAL

A. Construction of the private sewer system shall conform to the requirements of the CPC, as well as Owner Standards, Drawings, and Details.

3.2 VERIFY EXISTING CONDITIONS

A. The exact location and depth of existing sewer lines is unknown and is shown based upon the best information available.

B. Prior to ordering any materials, Contractor shall pot hole in the vicinity of each point of connection and crossing with existing utilities to verify the exact location (horizontal and vertical) and size of the existing sanitary sewer/utilities. This information shall be presented in the form of a field sketch through the RFI process for review and confirmation by the Engineer that the existing line and proposed design is adequate to serve the project.

3.3 PIPE DISTRIBUTION AND HANDLING

A. Pipe distribution shall not take place too far in advance of laying operations.

B. Pipe shall be handled carefully to avoid damage. Pipe handling by mechanical equipment shall be in accordance with the pipe manufacturer's recommendations.

C. The spigot ends of pipes and fittings that utilize polyvinyl chloride or polyurethane

factory applied flexible compression joints shall not rest on the ground or pavement.

D. All pipe and fittings shall be carefully lowered into the trench by means of a derrick, ropes, or other suitable tools or equipment, in such a manner as to prevent damage to pipe materials, protective coatings and linings. Under no circumstances shall pipe materials be dropped or dumped into the trench.

3.4 PIPE LAYING

A. No pipe shall be laid in water or when trench conditions are unsuitable to allow performing the job in a professional manner.

B. Pipe shall be laid with bell ends facing in the direction of laying and shall progress uphill.

C. Pipe deflections where permitted shall not exceed that recommended by the pipe manufacturer.

D. Pipe and fittings which do not allow sufficient space for joints shall be removed and replaced with pipe and fittings of proper dimensions.

E. Every precaution shall be taken to prevent foreign material from entering the pipe. If necessary, a heavy, tightly woven canvas bag of suitable size shall be placed over each end and left there until the connection is to be made to the adjacent pipe. During laying operations, no debris, tools, clothing or other materials shall be placed in the pipe. If foreign materials do enter the pipe, they shall be removed continuously as work progresses.

F. At times when pipe laying is not in progress, the open ends of laid pipe shall be closed by a watertight plug.

G. Wherever the jointing material specified is cement, two or more lengths of pipe shall be in place ahead of each joint before such joint is finished.

3.5 TESTING

A. All new sewer laterals shall be tested in accordance with procedures specified in the CPC, Section 712.2 (Water Test) as described herein. The tests shall be observed by the Owner's Representative.

B. The water test shall be applied to the drainage and vent systems either in its entirety or in sections. If the test is applied to the entire system, openings in the piping shall be tightly closed, except the highest opening, and the system filled with water to point of overflow. If the system is tested in sections, each opening shall be tightly plugged, except the highest opening of the section under test, and each section shall

be filled with water, but no section shall be tested with less than a ten (10) foot (3,048 mm) head of water. In testing successive sections, not less than the upper ten (10) feet (3,048 mm) of the next preceding section shall be tested, so that no joint or pipe in the building (except the uppermost ten (10) feet (3,048 mm) of the system) shall have been submitted to a test of less than a ten (10) foot (3,048 mm) head of water. The water shall be kept in the system, or in the portion under test, for not less than fifteen
(15) minutes before inspection starts. The system shall then be tight at points.

C. An Owner Inspector shall witness all sewer utility testing.

3.6 CLEAN UP

A. Remove all debris and stains resulting from the work of this section.

END OF SECTION

SECTION 334000
SITE DRAINAGE

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Provide and install storm and roof drain pipe and appurtenances.

B. Provide and install subdrain pipe and appurtenances.

C. Provide and install storm and roof drain system structures, including clean-outs, drainage inlets, etc.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including the Division 01 Specification Sections, apply to this Section.

B. Related Sections include the following:
1. Trenching, Backfilling and Compaction - Section 312316

1.3 SUBMITTALS

A. In accordance with Administrative Requirements Specifications:
1. Submit choice of storm drain pipe and cleanouts, drainage structures, and drainage grates to Engineer for review prior to ordering.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Storm drain and roof drain piping and structures shall be delivered, handled, and stored in a way that prevents damage to the pipe/structures, or the entry of foreign materials into the pipe.

B. Regardless of cause, damaged pipe/structures shall be replaced with new products at the expense of the Contractor.

1.5 GRADE AND ALIGNMENT CONTROL

A. General
1. The necessary installation procedures that will ensure the pipes are installed at the location and grade staked in the field shall be used.

B. Method
1. One of the following methods shall be utilized to control grade and alignment:

a. Electronic 'Laser' beam set at structure locations or grade breaks. At least three grade points shall be checked to verify the set grade.
b. Survey instrument set at structure to site between structures at the set grade.

C. Equipment
1. The Contractor shall furnish all equipment necessary to install and inspect the pipe installation. Grade rod shall be held to a minimum in all cases.

PART 2 - PRODUCTS

2.1 STORM DRAIN PIPE

A. Storm drain and roof pipe 8" to 12" in diameter shall be Polyvinyl Chloride Pipe (PVC), SDR 35, Series 46, High Density Polyethylene (HDPE),Type S, or approved equal.

B. Storm drain and roof pipe 4" to 6" in diameter and shall be Polyvinyl Chloride Pipe (PVC), SDR 35, Series 46, or approved equal

C. Storm and roof drain pipe 3" diameter and smaller shall be Polyvinyl Chloride Pipe (PVC), SCH 80, or approved equal.

D. Subdrain pipe shall be perforated Polyvinyl Chloride Pipe (PVC), SDR 35, Series 46, or approved equal.

E. PVC pipe (SDR 35) shall be have with water tight, gasketed couplings.

F. PVC pipe (SCH 80) shall have solvent weld couplings.

G. PVC pipe shall have fittings (ells, tees, wyes, etc.) compatible to the pipe type.

2.2 DRAINAGE STRUCTURES

A. Drainage inlets (SDDI) noted on the plan as "1212", "1818" or "2424" shall be as manufactured by Oldcastle Infrastructure, or approved equal, and shall be of the model/size indicated on the plans. Grates shall be heavy duty in hard surfaced areas with ½" maximum opening bolt down grates, and standard duty in planting areas, with bolt down grates.

B. SDDIs placed in concrete areas shall be installed with a paving notch.

PART 3 - EXECUTION

3.1 GENERAL

A. All construction of the storm drain shall conform to the requirements of applicable local municipal/County Standards.

3.2 VERIFY EXISTING CONDITIONS

A. The exact location and depth of the existing storm drains is unknown and is shown based on the best information available.

B. Prior to ordering of any materials, Contractor shall pot hole in the vicinity of each point of connection and crossing with existing utilities to verify the exact location (horizontal and vertical) and size of the existing storm drain/existing utilities. This information shall be presented in the form of a field sketch through the RFI process for review and confirmation by the Engineer that the proposed design is adequate to serve the project.

3.3 STORM DRAIN PIPE

A. Trenching shall be as indicated in Section 312316, Trenching, Backfilling and Compaction.

B. Pipe laying shall be as indicated in paragraph 3.05 herein.

C. No pipe shall be installed which is cracked, damaged or otherwise unsuitable for use in the opinion of the Engineer.

3.4 STORM DRAINAGE STRUCTURES

A. Excavation and backfill shall conform to Section 312316, Trenching, Backfilling and Compaction.

B. Joints shall be grouted to form a watertight seal. Any visible leaks shall be permanently plugged.

3.5 PIPE LAYING

A. No pipe shall be laid when trench conditions are unsuitable to allow performing the job in a professional manner.

B. Where ground water occurs, pumping shall continue until backfilling has progressed to a sufficient height to prevent flotation of the pipe. Water shall be disposed of in such a manner as to cause no property damage or be a hazard to public health in accordance with Section 31 2316, Trenching, Backfilling and Compaction.

C. Pipe shall be laid with bell ends facing in the direction of laying, and shall progress uphill/upslope.

D. Pipe deflections where permitted shall not exceed that recommended by the pipe manufacturer.

E. If High Density Polyethylene (HDPE) pipe is used, the exterior ribbed wall may be removed to avoid conflicts with other utilities. The extent of the removal shall not exceed 18” measured along the length of the pipe.

F. Every precaution shall be taken to prevent foreign material from entering the pipe. If necessary, a heavy, tightly woven canvas bag of suitable size shall be placed over each end and left there until the connection is to be made to the adjacent pipe. During laying operations, no debris, tools, clothing or other materials shall be placed in the pipe. If foreign materials do enter the pipe, they shall be removed continuously as work progresses.

G. At times when pipe laying is not in progress, the open ends of laid pipe shall be closed by a water-tight plug.

3.6 CLEAN UP

A. Remove all debris and stains resulting from the work of this section.

B. Properly repair all surfaces disturbed by construction.

END OF SECTION

EXHIBIT “C” – SPECIAL CONDITIONS

ARTICLE 1 BONDS

Within ten (10) calendar days from the date the Contractor is notified of award of the Contract, the Contractor shall deliver to the City four identical counterparts of the Performance Bond and Payment Bond on the forms supplied by the City and included as Exhibit “F” to the Contract. Failure to do so may, in the sole discretion of City, result in the forfeiture of Contractor’s bid security. The surety supplying the bond must be an admitted surety insurer, as defined in Code of Civil Procedure Section 995.120, authorized to do business as such in the State of California and satisfactory to the City. The Performance Bond and the Payment Bond shall be for one hundred percent (100%) of the Total Contract Price.

EXHIBIT "D" - CONTRACTORS CERTIFICATION REGARDING WORKERS COMPENSATION

I am aware of the provisions of section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this Contract.

Name of Bidder: Stockbridge General Contracting Inc.

Signature: Kristopher Sarnowsky

Name: Kristopher Sarnowsky

Title: Authorized Signer

Dated: 4/21/26

EXHIBIT "E" - PUBLIC WORKS CONTRACTOR REGISTRATION CERTIFICATION

Pursuant to Labor Code sections 1725.5 and 1771.1, all contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a contract to perform public work must be registered with the Department of Industrial Relations. See http://www.dir.ca.gov/Public-Works/PublicWorks.html for additional information.

No bid will be accepted nor any contract entered into without proof of the contractor's and subcontractors' current registration with the Department of Industrial Relations to perform public work.

Bidder hereby certifies that it is aware of the registration requirements set forth in Labor Code sections 1725.5 and 1771.1 and is currently registered as a contractor with the Department of Industrial Relations.[2]

Name of Bidder: Stockbridge General Contracting Inc.

DIR Registration Number: 1000008209

DIR Registration Expiration: 6/30/2026

Small Project Exemption: _____ Yes or _____ No

Unless Bidder is exempt pursuant to the small project exemption, Bidder further acknowledges:

Bidder shall maintain a current DIR registration for the duration of the project.

Bidder shall include the requirements of Labor Code sections 1725.5 and 1771.1 in its contract with subcontractors and ensure that all subcontractors are registered at the time of bid opening and maintain registration status for the duration of the project.

Failure to submit this form or comply with any of the above requirements may result in a finding that the bid is non-responsive.

Name of Bidder: Stockbridge General Contracting Inc.

Signature: Kristopher Sarnowsky

Name and Title: Kristopher Sarnowsky Authorized Signer

Dated: 4/21/26

[2] If the Project is exempt from the contractor registration requirements pursuant to the small project exemption under Labor Code Sections 1725.5 and 1771.1, please mark "Yes" in response to "Small Project Exemption."

EXHIBIT “F” – PAYMENT AND PERFORMANCE BONDS

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, the City of Merced (hereinafter referred to as "City") has awarded to **STOCKBRIDGE GENERAL CONTRACTING, INC**., (hereinafter referred to as the "Contractor") an agreement for **CP240049 – General Vang Pao Park** (hereinafter referred to as the "Project").

WHEREAS, the work to be performed by the Contractor is more particularly set forth in the Contract Documents for the Project dated _____, (hereinafter referred to as "Contract Documents"), the terms and conditions of which are expressly incorporated herein by reference; and

WHEREAS, the Contractor is required by said Contract Documents to perform the terms thereof and to furnish a bond for the faithful performance of said Contract Documents.

NOW, THEREFORE, we, **Stockbridge General Contracting, Inc**., the undersigned Contractor and _____ as Surety, a corporation organized and duly authorized to transact business under the laws of the State of California, are held and firmly bound unto the City in the sum of **Nine Hundred Eighty Six Thousand Nine Hundred Seventy Seven Dollars, ($986,977.00),** said sum being not less than one hundred percent (100%) of the total amount of the Contract, for which amount well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that, if the Contractor, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the Contract Documents and any alteration thereof made as therein provided, on its part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their intent and meaning; and shall faithfully fulfill all obligations including the one-year guarantee of all materials and workmanship; and shall indemnify and save harmless the City, its officers and agents, as stipulated in said Contract Documents, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

As a condition precedent to the satisfactory completion of the Contract Documents, unless otherwise provided for in the Contract Documents, the above obligation shall hold good for a period of one (1) year after the acceptance of the work by City, during which time if Contractor shall fail to make full, complete, and satisfactory repair and replacements and totally protect the City from loss or damage resulting from or caused by defective materials or faulty workmanship, Surety shall undertake and faithfully fulfill all such obligations. The obligations of Surety hereunder shall continue so long as any obligation of Contractor remains. Nothing herein shall limit the City's rights or the Contractor or Surety's obligations under the Contract, law or equity, including, but not limited to, California Code of Civil Procedure section 337.15.

Whenever Contractor shall be, and is declared by the City to be, in default under the Contract Documents, the Surety shall remedy the default pursuant to the Contract Documents, or shall promptly, at the City's option:

(1) Take over and complete the Project in accordance with all terms and conditions in the Contract Documents; or

(2) Obtain a bid or bids for completing the Project in accordance with all terms and conditions in the Contract Documents and upon determination by Surety of the lowest responsive and responsible bidder, arrange for a Contract between such bidder, the Surety and the City, and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the contract price, including other costs and damages for which Surety may be liable. The term "balance of the contract price" as used in this paragraph shall mean the total amount payable to Contractor by the City under the Contract and any modification thereto, less any amount previously paid by the City to the Contractor and any other set offs pursuant to the Contract Documents.

(3) Permit the City to complete the Project in any manner consistent with local, California and federal law and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the contract price, including other costs and damages for which Surety may be liable. The term "balance of the contract price" as used in this paragraph shall mean the total amount payable to Contractor by the City under the Contract and any modification thereto, less any amount previously paid by the City to the Contractor and any other set offs pursuant to the Contract Documents.

Surety expressly agrees that the City may reject any contractor or subcontractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Contractor.

Surety shall not utilize Contractor in completing the Project nor shall Surety accept a bid from Contractor for completion of the Project if the City, when declaring the Contractor in default, notifies Surety of the City's objection to Contractor's further participation in the completion of the Project.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract Documents or to the Project to be performed thereunder shall in any way affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract Documents or to the Project, including but not limited to the provisions of sections 2819 and 2845 of the California Civil Code.

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

(Corporate Seal)

_____
Contractor/ Principal

By _____

Title _____

_____
Surety

(Corporate Seal)

By _____
Attorney-in-Fact

Signatures of those signing for the Contractor and Surety must be notarized and evidence of corporate authority attached.

(Attach Attorney-in-Fact Certificate) Title _____

The rate of premium on this bond is _____ per thousand. The total amount of premium charges, $_____.
(The above must be filled in by corporate attorney.)

THIS IS A REQUIRED FORM
Any claims under this bond may be addressed to:

(Name and Address of Surety) _____
_____
_____

(Name and Address of Agent or Representative for service of process in California, if different from above) _____
_____

(Telephone number of Surety and Agent or Representative for service of process in California) _____

NOTE: A copy of the Power-of-Attorney authorizing the person signing on behalf of the Surety to do so must be attached hereto.

Notary 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 _____

On _____, 20___, before me, _____, Notary Public, personally

appeared _____, 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.

_____

Signature of Notary Public

OPTIONAL

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

CAPACITY CLAIMED BY SIGNER

☐ Individual
☐ Corporate Officer

_____
Title(s)

☐ Partner(s) ☐ Limited ☐ General
☐ Attorney-In-Fact
☐ Trustee(s)
☐ Guardian/Conservator
☐ Other:

Signer is representing:
Name Of Person(s) Or Entity(ies)

_____

_____

DESCRIPTION OF ATTACHED DOCUMENT

_____
Title or Type of Document

_____
Number of Pages

_____
Date of Document

_____
Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for Contractor/Principal.

Notary 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 _____

On _____, 20___, before me, _____, Notary Public, personally

appeared _____, 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.

_____

Signature of Notary Public

OPTIONAL

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- ☐ Individual
- ☐ Corporate Officer

_____
Title(s)

- ☐ Partner(s)
  - ☐ Limited
  - ☐ General
- ☐ Attorney-In-Fact
- ☐ Trustee(s)
- ☐ Guardian/Conservator
- ☐ Other:

Signer is representing:
Name Of Person(s) Or Entity(ies)

_____

_____

DESCRIPTION OF ATTACHED DOCUMENT

_____
Title or Type of Document

_____
Number of Pages

_____
Date of Document

_____
Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for the Attorney-in-Fact. The Power-of Attorney to local representatives of the bonding company must also be attached.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS That

WHEREAS, the City of Merced (hereinafter designated as the "City"), by action taken or a resolution passed_____, 20____has awarded to **STOCKBRIDGE GENERAL CONTRACTING, INC**., hereinafter designated as the "Principal," a contract for the work described as follows:

CP240049 – General Vang Pao Park (the "Project"); and

WHEREAS, the work to be performed by the Principal is more particularly set forth in the Contract Documents for the Project dated _____ ("Contract Documents"), the terms and conditions of which are expressly incorporated by reference; and

WHEREAS, said Principal is required to furnish a bond in connection with said contract; providing that if said Principal or any of its Subcontractors shall fail to pay for any materials, provisions, provender, equipment, or other supplies used in, upon, for or about the performance of the work contracted to be done, or for any work or labor done thereon of any kind, or for amounts due under the Unemployment Insurance Code or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of said Principal and its Subcontractors with respect to such work or labor the Surety on this bond will pay for the same to the extent hereinafter set forth.

NOW THEREFORE, we, the Principal and _____ as Surety, are held and firmly bound unto the City in the penal sum of **Nine Hundred Eighty Six Thousand Nine Hundred Seventy Seven Dollars, ($986,977.00)** lawful money of the United States of America, for the payment of which sum 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 said Principal, his or its subcontractors, heirs, executors, administrators, successors or assigns, shall fail to pay any of the persons named in Section 9100 of the Civil Code, fail to pay for any materials, provisions or other supplies, used in, upon, for or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or amounts due under the Unemployment Insurance Code with respect to work or labor performed under the contract, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department or Franchise Tax Board from the wages of employees of the contractor and his subcontractors pursuant to Section 18663 of the Revenue and Taxation Code, with respect to such work and labor the Surety or Sureties will pay for the same, in an amount not exceeding the sum herein above specified.

This bond shall inure to the benefit of any of the persons named in Section 9100 of the Civil Code so as to give a right of action to such persons or their assigns in any suit brought upon this bond.

It is further stipulated and agreed that the Surety on this bond shall not be exonerated or released from the obligation of this bond by any change, extension of time for performance, addition, alteration or modification in, to, or of any contract, plans, specifications, or agreement pertaining or relating to any scheme or work of improvement herein above described, or pertaining or relating to the furnishing of labor, materials, or equipment therefore, 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 or work of improvement herein above described, 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 by any fraud practiced by

any person other than the claimant seeking to recover on the bond and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given, and under no circumstances shall Surety be released from liability to those for whose benefit such bond has been given, by reason of any breach of contract between the owner or City and original contractor or on the part of any obligee named in such bond, but the sole conditions of recovery shall be that claimant is a person described in Section 9100 of the Civil Code, and has not been paid the full amount of his claim and that Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned and the provisions of sections 2819 and 2845 of the California Civil Code.

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

(Corporate Seal)

_____
Contractor/ Principal

By _____

Title _____

_____
Surety

(Corporate Seal)

By _____
Attorney-in-Fact

Title _____

Signatures of those signing for the Contractor and Surety must be notarized and evidence of corporate authority attached. A Power-of-Attorney authorizing the person signing on behalf of the Surety to do so must be attached hereto.

NOTE: A copy of the Power-of-Attorney authorizing the person signing on behalf of the Surety to do so must be attached hereto.

Notary 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 _____

On _____, 20___, before me, _____, Notary Public, personally

appeared _____, 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.

_____

Signature of Notary Public

OPTIONAL

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

CAPACITY CLAIMED BY SIGNER

☐ Individual
☐ Corporate Officer

_____
Title(s)

☐ Partner(s) ☐ Limited ☐ General
☐ Attorney-In-Fact
☐ Trustee(s)
☐ Guardian/Conservator
☐ Other:

Signer is representing:
Name Of Person(s) Or Entity(ies)

_____

_____

DESCRIPTION OF ATTACHED DOCUMENT

_____
Title or Type of Document

_____
Number of Pages

_____
Date of Document

_____
Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for Contractor/Principal.

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COUNTY OF _____

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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.

_____

Signature of Notary Public

OPTIONAL

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

CAPACITY CLAIMED BY SIGNER

- ☐ Individual
- ☐ Corporate Officer

_____
Title(s)

- ☐ Partner(s)
  - ☐ Limited
  - ☐ General
- ☐ Attorney-In-Fact
- ☐ Trustee(s)
- ☐ Guardian/Conservator
- ☐ Other:

Signer is representing:
Name Of Person(s) Or Entity(ies)

_____

_____

DESCRIPTION OF ATTACHED DOCUMENT

_____
Title or Type of Document

_____
Number of Pages

_____
Date of Document

_____
Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for the Attorney-in-Fact. The Power-of Attorney to local representatives of the bonding company must also be attached.

March 16, 2026

CITY OF MERCED
DEPARTMENT OF ENGINEERING
678 W. 18th Street, Merced, CA 95340

ADDENDUM NO. 1

To **ALL PROSPECTIVE BIDDERS**
Under Specifications for the Construction of

GENERAL VANG PAO MEMORIAL PARK
PROJECT NUMBER CP240049

For which bids are to be received at the Office of the Purchasing Agent of the City of Merced, 2525 "O" St., Merced, California, until **2:00 PM on April 7, 2026**.

The following revision to the specifications shall be made:

Item 1: NOTICE INVITING BIDS

Replace portions of section:

N-8 OBTAINING OR INSPECTING CONTRACT DOCUMENTS:

- Remove Dat Nguyen (nguyend@cityofmerced.org) and replace it with Dat Nguyen (**nguyend@cityofmerced.gov**)

Replace Cover Sheet:

- Landscape Plans for the Construction of GENERAL VANG PAO MEMORIAL PARL

Daryl Jordan, P.E.
City Engineer

Name of Bidder or Firm: STOCKBRIDGE GENERAL CONTRACTING INC.

THIS ADDENDUM MUST BE SIGNED AND RETURNED WITH BID PROPOSAL.

ADDENDUM NO. 1 has been received and incorporated into the bid proposal.

Received By: Kristopher Iannoni

Date : 4/6/26 Planholder : STOCKBRIDGE GENERAL CONTRACTING INC.

NOTE: RECEIPT OF THIS ADDENDUM MUST ALSO BE ACKNOWLEDGED IN THE CONTRACTOR'S BID PROPOSAL.

March 23, 2026

CITY OF MERCED
DEPARTMENT OF ENGINEERING
678 W. 18th Street, Merced, CA 95340

ADDENDUM NO. 2

To **ALL PROSPECTIVE BIDDERS**
Under Specifications for the Construction of

GENERAL VANG PAO MEMORIAL PARK
PROJECT NUMBER CP240049

For which bids are to be received at the Office of the Purchasing Agent of the City of Merced, 2525 "O" St., Merced, California, until **2:00 PM on April 7, 2026**.

The following revision to the specifications shall be made:

Item 1: NOTICE INVITING BIDS

Adding Additional Information to the Special Provisions:

SECTION 11 68 00 PLAYGROUND EQUIPMENT –
3.3 INSTALLATION, GENERAL (see attached)

Daryl Jordan, P.E.
City Engineer

Name of Bidder or Firm: STOCKBRIDGE GENERAL CONTRACTING INC.

THIS ADDENDUM MUST BE SIGNED AND RETURNED WITH BID PROPOSAL.

ADDENDUM NO. ~~1~~ 2 has been received and incorporated into the bid proposal.

Received By: Kristopher Sarnovsky

Date : 4/6/26 Planholder : STOCKBRIDGE GENERAL CONTRACTING INC.

NOTE: RECEIPT OF THIS ADDENDUM MUST ALSO BE ACKNOWLEDGED IN THE CONTRACTOR'S BID PROPOSAL.

Daryl Jordan, P.E.
City Engineer

Name of Bidder or Firm: STOCKBRIDGE GENERAL CONTRACTING INC.

THIS ADDENDUM MUST BE SIGNED AND RETURNED WITH BID PROPOSAL.

ADDENDUM NO. ~~1~~ 3 has been received and incorporated into the bid proposal.

Received By: Kristopher Samowitz

Date : 4/6/26 Planholder : STOCKBRIDGE GENERAL CONTRACTING INC.

NOTE: RECEIPT OF THIS ADDENDUM MUST ALSO BE ACKNOWLEDGED IN THE CONTRACTOR'S BID PROPOSAL.

March 30, 2026

CITY OF MERCED
DEPARTMENT OF ENGINEERING
678 W. 18th Street, Merced, CA 95340

ADDENDUM NO. 4

To **ALL PROSPECTIVE BIDDERS**
Under Specifications for the Construction of

GENERAL VANG PAO MEMORIAL PARK
PROJECT NUMBER CP240049

For which bids are to be received at the Office of the Purchasing Agent of the City of Merced, 2525 "O" St., Merced, California, until **2:00 PM on April 7, 2026**.

The following revision to the specifications shall be made:

Item 1: BID DOCUMENT

Replace **BID** document starting on Page XIV. Contractor are to use the below document for bid purposes.

Daryl Jordan, P.E.
City Engineer

Name of Bidder or Firm: STOCKBRIDGE GENERAL CONTRACTING INC.

THIS ADDENDUM MUST BE SIGNED AND RETURNED WITH BID PROPOSAL.

ADDENDUM NO. 4 has been received and incorporated into the bid proposal.

Received By: Kristopher Sarmiento

Date : 4/6/26 Planholder : STOCKBRIDGE GENERAL CONTRACTING INC.

NOTE: RECEIPT OF THIS ADDENDUM MUST ALSO BE ACKNOWLEDGED IN THE CONTRACTOR'S BID PROPOSAL.

BID

Bids will be received at 2525 "O" Street, Merced, California 95340, until **2:00 p.m. on April 7, 2026.**

NAME OF BIDDER: Stockbridge General Contracting, Inc.

City of Merced
2525 "O" Street
Merced, California 95340

The undersigned hereby declare that we have carefully examined the location of the proposed Work, and have read and examined the Contract, including all plans, specifications, and all addenda, if any for the following Project:

CP240049 - GENERAL VANG PAO MEMORIAL PARK

We hereby propose to furnish all labor, materials, equipment, tools, transportation, and services, and to discharge all duties and obligations necessary and required to perform and complete the Project, as described and in strict conformity with the Drawings, and these Specifications for TOTAL BID PRICE indicated herein.

The undersigned acknowledges receipt, understanding, and full consideration of the following addenda to the Contract:

Addenda No. 01, 02, 03 ,04

Attached are the following documents:

		Page:
1.	Bid Bond	10
2.	List of Subcontractors	13
3.	Non-Collusion Declaration	15
4.	Iran Contracting Act Certification	16
5.	Bidder Information and Experience Form.	17
6.	Local Business Enterprise (LBE) Participation	24
7.	Contractors Certification Regarding Workers Compensation (Exhibit "D")	34
8.	Public Works Contractor Registration Certification (Exhibit "E")	35

SCHEDULE OF BID PRICES

All Bid items, including lump sums, unit prices and alternates (if any), must be filled in completely. Bid items are described in Summary of Work. Quote in figures only, unless words are specifically requested.
CY = Cubic Yard EA = Each LF = Linear Foot LS = Lump Sum SF= Square Feet

Assume all items are purchased and installed by Contractor unless noted as shown below:

Any quantities shown are estimated and for reference only. Bidder is responsible for verifying all quantities. Bids to be awarded on Base Bid and Selected Add Alternates.

BASE BID SCHEDULE

BID ITEM NO.	ITEM DESCRIPTION	EST. QTY.	UNIT	UNIT PRICE	TOTAL
1	Permits, Bonds, License & Insurance	1	LS	$50,800	$ 50,800
2	Public Convenience and Safety	1	LS	$ 1,000	$ 1,000
3	Water Pollution Control	1	LS	$18,500	$ 18,500
4	Earthwork/Grading	1	LS	$43,400	$ 43,400
5	Surveying Services	1	LS	$ 10,600	$ 10,600
6	Demolition Per Plan	1	LS	$ 11,200	$ 11,200
7	Gravel Parking	11,800	SF	$ 1.40	$ 16,520
8	Concrete ADA Parking, Striping and Signage, and Truncated Domes	1	LS	$18,600	$ 18,600
9	Concrete – Standard Grey	7,200	SF	$ 20	$ 144,000
10	Concrete Thickened Edge	200	LF	$ 20	$ 4,000
11	Concrete ADA Ramp at Play Area	1	EA	$ 3,900	$ 3,900
12	Decomposed Granite	2,100	SF	$ 4	$ 8,400
13	Steel Edging	160	LF	$ 7.50	$ 1,200
14	Landscape Tie Timbers	8	EA	$ 375	$ 3,000
15	Concrete Seatwall	30	LF	$ 570	$ 17,100
16	Boulder – 12" – 18"	19	EA	$ 165	$ 3,135
17	Boulder – 24"	30	EA	$ 260	$ 7,800
18	Boulder – 36"	36	EA	$430	$ 15,480
19	Embedded Log	17	EA	$ 1,000	$ 17,000
20	Drinking Fountain	1	EA	$ 9,700	$ 9,700
21	Pour-In-Place Rubber Surfacing	4,780	SF	$ 34	$ 162,520
22	Engineered Wood Fiber Fall Material	170	CY	$ 70	$ 11,900

23	General Vang Pao Memorial Plaza	1	LS	$45,800	$ 45,800
24	Steel Monument Sign - General Vang Pao	1	EA	$40,000	$ 40,000
25	Steel Monument Sign - Aletha June	1	EA	$12,700	$ 12,700
26	First 5 California Sign	1	EA	$1,500	$ 1,500
27	Bark Mulch	125	CY	$ 90	$ 11,250
28	Trees	41	EA	$460	$ 18,860
29	Shrubs	301	EA	$ 28	$ 8,428
30	Hydroseed	20,696	SF	$ .25	$ 5,174
31	Landscape Soil Amendment	1	LS	$24,000	$ 24,000
32	Landscape Irrigation	1	LS	$76,000	$ 76,000
33	Potable Utility Water System	1	LS	$9,600	$ 9,600
34	Sanitary Sewer Utility System	1	LS	$4,700	$ 4,700
35	Storm Drain System	1	LS	$21,800	$ 21,800
36	Electrical Sleeve For Future	100	LF	$ 6	$ 600
37	Embankment Slide - Install Only	1	EA	$4,600	$ 4,600
38	ADA Twirl a Whirl – Install Only	1	EA	$9,000	$ 9,000
39	Two Bay Swing Set – Install Only	1	EA	$13,400	$ 13,400
40	Large Play Structure – Install Only	1	EA	$30,340	$ 30,340
41	Ramesses Net Climber – Install Only	1	EA	$12,800	$ 12,800
42	Concrete Ping Pong Table – Install Only	1	EA	$ 660	$ 660
43	Contrabass Chimes – Install Only	1	EA	$2,500	$ 2,500
44	Square Steel Picnic Tables – Install Only	6	EA	$ 320	$ 1,920
45	Trash Receptacles – Install Only	3	EA	$ 110	$ 330
46	Climbing Logs – Install Only	6	EA	$750	$ 4,500
	SUB-TOTAL BASE BID				$ 940,217
	PROJECT LABOR AGREEMENT (ENTER ONLY IF BASE BID SUB-TOTAL EXCEEDS $1,000,000 OTHERWISE ENTER $0.00)		LS		$ 26,000
	TOTAL BASE BID				$ 966,217

Notes:

1. Contractors must use this form to provide bids (no exceptions or alterations are permitted).
2. Bid item totals must roll up to the base bid total and include all materials and labor required for a complete installation.
3. If Base Bid is $1,000,000 or over. Contractor is required to follow the attached Project Labor Agreement.

ADDITIVE ALTERNATE No. 1
BID SCHEDULE

BID ITEM NO.	ITEM DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	TOTAL
A1	Steel Shade Structure 24'x24' - Icon	1	EA	$180,770	$ 180,770
A2	Reflexology Trail	7,000	SF	$2.50	$ 17,500
A3	Calypso Drum	1	EA	$4,100	$ 4,100
A4	Bossa Nova Drum	3	EA	$4,000	$ 12,000
A5	Crystal Stud Lights	14	EA	$1,050	$ 14,700
A6	Bollard Lights	6	EA	$2,800	$ 16,800
A7	Solar Overhead Lights	5	EA	$8,200	$ 41,000
A8	Wavy Railing	2	EA	$830	$ 1,660
A9	Steel Bench at Plaza	1	LS	$8,800	$ 8,800
A10	Steel Picket Fence – 4' Tall	195	LF	$145	$ 28,275
A11	Steel Picket Gate – 4' Tall	2	EA	$5,000	$ 10,000
A12	**Flagstone Pavers at Picnic	1	LS	$23,500	$ 23,500
A13	Live Edge Table	2	EA	$5,900	$ 11,800
A14	Live Edge Bench	1	EA	$ 1,800	$ 1,800
A15	Soil Export Allowance	50	CY	$ 30	$ 1,500
	BID ADDITIVE ALERTNATE No. 1 SUB-TOTAL				$ 374,205
	PROJECT LABOR AGREEMENT (ENTER ONLY IF BASE BID SUB-TOTAL AND BID ALTERNATE No. 1 SUB-TOTAL EXCEEDS $1,000,000 OTHERWISE ENTER $0.00)		LS		$ 10,300
	TOTAL BID ADDITIVE ALTERNATE No. 1				$ 384,505

**If awarded, flagstone pavers to take place of 1,025 SF of decomposed Granite

ADDITIVE ALTERNATE No. 2
BID SCHEDULE

BID ITEM NO.	PARKING LOT	EST. QTY	UNIT	UNIT PRICE	TOTAL
B1	Remove Asphalt	1	SF	$ 1,800	$ 1,800
B2	Remove Concrete	120	SF	$ 4.50	$ 540
B3	Concrete – Standard Grey	626	SF	$ 23	$ 14,398
B4	Concrete Drive Apron	316	SF	$ 40	$ 12,640
B5	Concrete ADA Parking, Striping, and Signage. Add ADA Curb Ramp	1	LS	$ 17,000	$ 17,000
B6	Asphalt Paving and Striping	8,390	SF	$ 6.70	$ 56,213
B7	Concrete Curb 6"	555	LF	$ 51	$ 28,305
B8	Removable Bollard	1	EA	$ 1,300	$ 1,300
B9	Bark Mulch	380	CY	$ 80	$ 30,400
	BID ADDITIVE ALERTNATE No. 2 SUB-TOTAL				$ 162,596
	PROJECT LABOR AGREEMENT (ENTER ONLY IF BASE BID SUB-TOTAL, AND BID ALTERNARE No. 2 SUB-TOTAL EXCEEDS $1,000,000 OTHERWISE ENTER $0.00)		LS	$ 1,700	$ 1,700
	TOTAL BID ADDITIVE ALTERNATE No. 2				$ 164,296

Notes:

1. Contractors must use this form to provide bids (no exceptions or alterations are permitted).
2. Bid item totals must roll up to the base bid total and include all materials and labor required for a complete installation.

Total Base Bid $ 966,217

Total Add Bid Additive Alternate No. 1 $ 384,505

Total Add Bid Additive Alternate No. 2 $ 164,296

Total Base Bid and Add Alternates No. 1 & No. 2 $ 1,515,018

The costs for any Work shown or required in the Contract, but not specifically identified as a line item are to be included in the related line items and no additional compensation shall be due to Contractor for the performance of the Work.

In case of discrepancy between the Unit Price and the Item Cost set forth for a unit basis item, the unit price shall prevail and shall be utilized as the basis for determining the lowest responsive,

responsible Bidder. However, if the amount set forth as a unit price is ambiguous, unintelligible, or uncertain for any cause, or is omitted, or is the same amount as the entry in the "Item Cost" column, then the amount set forth in the "Item Cost" column for the item shall prevail and shall be divided by the estimated quantity for the item and the price thus obtained shall be the Unit Price.

For purposes of evaluating Bids, the City will correct any apparent errors in the extension of unit prices and any apparent errors in the addition of lump sum and extended prices.

The estimated quantities for Unit Price items are for purposes of comparing Bids only and the City makes no representation that the actual quantities of work performed will not vary from the estimates. Final payment shall be determined by the Engineer from measured quantities of work performed based upon the Unit Price.

TOTAL BID PRICE:

TOTAL BID PRICE BASED ON BID SCHEDULE TOTAL OF UNIT PRICES
FOR CP240049 - GENERAL VANG PAO MEMORIAL PARK

$ 1,515,018
Total Base Bid Price in Numbers

$ One million Five Hundred Fifteen Thousand Eighteen Dollars
Total Base Bid Price in Written Form

The undersigned agrees that this Bid Form constitutes a firm offer to the City which cannot be withdrawn for the number of calendar days indicated in the Notice Inviting Bids from and after the Bid opening, or until a Contract for the Work is fully executed by the City and a third party, whichever is earlier.

The successful bidder hereby agrees to sign the Contract and furnish the necessary bonds and certificates of insurance within ten (10) working days after the City provides the successful bidder with the Notice of Award.

Upon receipt of the signed Contract and other required documents, the Contract will be executed by the City, after which the City will prepare a letter giving Contractor Notice to Proceed. The official starting date shall be the date of the Notice to Proceed, unless otherwise specified. The undersigned agrees to begin the Work within ten (10) working days of the date of the Notice to Proceed, unless otherwise specified. The undersigned has examined the location of the proposed work and is familiar with the Drawings and Specifications and the local conditions at the place where work is to be done.

If awarded the Contract, the undersigned agrees that there shall be paid by the undersigned and by all subcontractors to all laborers, workers and mechanics employed in the execution of such Contract no less than the prevailing wage rate within Merced County for each craft, classification, or type of worker needed to complete the Work contemplated by this Contract as established by the Director of the Department of Industrial Relations. A copy of the prevailing rate of per diem wages are on file at the City's Administration Office and shall be made available to interested parties upon request.

Enclosed find cash, bidder's bond, or cashier's or certified check No. N/A from the N/A Bank in the amount of 10% OF BID, which is not less than ten percent (10%) of this bid, payable to City of Merced as bid security and which is given as a guarantee that the undersigned will enter into a Contract and provide the necessary bonds and certificates of insurance if awarded the Work.

The bidder furthermore agrees that in case of bidder's default in executing said Contract and furnishing required bonds and certificates of insurance, the cash, bidder's bond, or cashier's or certified check accompanying this proposal and the money payable thereon shall become and shall remain the property of the City of Merced.

Bidder is an individual _____, or corporation X, or partnership _____, organized under the laws of the State of California.

Bidder confirms license(s) required by California State Contractor's License Law for the performance of the subject project are in full effect and proper order. The following are the Bidder's applicable license number(s), with their expiration date(s) and class of license(s):

License Number: 967612

Expiration Date: 11/30/2027

Classifications: A, B, C-8, C27, C61/D09, C61/D34

If the Bidder is a joint venture, each member of the joint venture must include the required licensing information.

Sureties that will furnish the Faithful Performance Bond and the Labor and Material Payment Bond, in the form specified herein, in an amount equal to one hundred percent (100%) of the contract price within ten (10) working days from the date the City provides the successful bidder the Notice of Award. Sureties must meet all of the State of California bonding requirements, as defined in California Code of Civil Procedure Section 995.120 and must be authorized by the State of California.

The insurance company or companies to provide the insurance required in the Contract documents must have a Financial Strength Rating of not less than "A-" and a Financial Size Category of not less than "Class VII" according to the latest Best Key Rating Guide. At the sole discretion of the City, the City may waive the Financial Strength Rating and the Financial Size Category classifications for Workers' Compensation insurance.

I hereby certify under penalty of perjury under the laws of the State of California that all of the information submitted in connection with this Bid and all of the representations made herein are true and correct.

Executed at Clovis, CA, on this 6th day of April, 2026.

Stockbridge General Contracting, Inc.
(Bidders Name – Print or Type)

Kris Sarnowsky, Project Manager
(Name and Title)

(Corporate Seal)

Kristopher Sarnowsky
(Signature)

Names of individual members of firm or names and titles of all officers of corporation and their addresses are listed below:

Name Guy Stockbridge Title CEO

Complete Address 2972 Larkin Ave, Clovis, Ca 93612

Phone 559-292-2900 FAX 559-292-7756

Name Guy Stockbridge Title Secretary

Complete Address 2972 Larkin Ave, Clovis, Ca 93612

Phone 559-292-2900 FAX 559-292-7756

Name Larissa Rojas Title CFO

Complete Address 2972 Larkin Ave, Clovis, Ca 93612

Phone 559-292-2900 FAX 559-292-7756

Name _____ Title _____

Complete Address _____

Phone _____ FAX _____

2. LIST OF SUBCONTRACTORS

In compliance with the Subletting and Subcontracting Fair Practices Act Chapter 4 (commencing at Section 4100), Part 1, Division 2 of the Public Contract Code of the State of California and any amendments thereof, Bidder shall set forth below: (a) the name and the location of the place of business, (b) the California contractor license number, (c) the DIR public works contractor registration number unless exempt pursuant to Labor Code Sections 1725.5 and 1771.1, and (d) the portion of the work which will be done by each subcontractor who will perform work or labor or render service to the Bidder in or about the construction of the work or improvement to be performed under this Contract in an amount in excess of one-half of one percent (0.5%) of the Bidder's Total Bid Price. Notwithstanding the foregoing, if the work involves the construction of streets and highways, then the Bidder shall list each subcontractor who will perform work or labor or render service to the Bidder in or about the work in an amount in excess of one-half of one percent (0.5%) of the Bidder's Total Bid Price or $10,000, whichever is greater. No additional time shall be granted to provide the below requested information.

If a Bidder fails to specify a subcontractor or if a contractor specifies more than one subcontractor for the same portion of work, then the Bidder shall be deemed to have agreed that it is fully qualified to perform that portion of work and that it shall perform that portion itself.

Work to be done by Subcontractor	Name of Subcontractor	Location of Business	CSLB Contractor License No.	DIR Registration Number	% of Work
LANDSCAPE / IRRIGATION	ELITE LANDSCAPE CONSTRUCTION, INC	CLOVIS, CA	967955	1000008210	.09
Survey	California Construction Surveying	Madera, Ca	PLS 7027	1000006224	.01
Concrete	Badillo Construction	Merced, Ca	1135896	2000010264	.18
PIP Rubber	Robertson Industry	Temple, AZ	667261	1000002700	.10

1. BID BOND

[Note: Not required when other form of Bidder's Security, e.g., cash, certified check, or cashier's check, accompanies bid.]

The makers of this bond are, Stockbridge General Contracting, Inc., as Principal, and Fidelity and Deposit Company of Maryland, as Surety and are held and firmly bound unto the City of Merced, hereinafter called the City, in the penal sum of TEN PERCENT (10%) OF THE TOTAL BID PRICE of the Principal submitted to City for the work described below, for the payment of which sum in lawful money of the United States, 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 whereas the Principal has submitted the accompanying bid dated April 7, 20 26, for CP240049 - GENERAL VANG PAO MEMORIAL PARK

If the Principal does not withdraw its Bid within the time specified in the Contract; and if the Principal is awarded the Contract and provides all documents to the City as required by the Contract; then this obligation shall be null and void. Otherwise, this bond will remain in full force and effect.

Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract shall in affect its obligation under this bond, and Surety does hereby waive notice of any such changes.

In the event a lawsuit is brought upon this bond by the City and judgment is recovered, the Surety shall pay all litigation expenses incurred by the City in such suit, including reasonable attorneys' fees, court costs, expert witness fees and expenses.

IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their several seals this 3rd day of April, 20 26, the name and corporate seal of each corporation.

(Corporate Seal)

Stockbridge General Contracting, Inc.
Contractor/ Principal

By Kristofer Sarnowsky
Kris Sarnowsky

Title Project Manager

(Corporate Seal)

Surety Fidelity and Deposit Company of Maryland

By
Attorney-in-Fact

(Attach Attorney-in-Fact Certificate) Title Kim Wilson, Attorney-in-Fact

Notary 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 _____

On _____, 20___, before me, _____, Notary Public, personally

appeared _____, who proved to me on the basis of satisfactory
Name(s) of Signer(s)

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.

_____
Signature of Notary Public

OPTIONAL

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

CAPACITY CLAIMED BY SIGNER

- ☐ Individual
- ☐ Corporate Officer

_____
Title(s)

- ☐ Partner(s) ☐ Limited ☐ General
- ☐ Attorney-In-Fact
- ☐ Trustee(s)
- ☐ Guardian/Conservator
- ☐ Other:

Signer is representing:
Name Of Person(s) Or Entity(ies)

_____

_____

DESCRIPTION OF ATTACHED DOCUMENT

_____
Title or Type of Document

_____
Number of Pages

_____
Date of Document

_____
Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for Contractor/Principal.

See Separate Notary Acknowledgement

Notary 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 _____

On _____, 20___, before me, _____, Notary Public, personally

appeared _____, 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.

_____

Signature of Notary Public

OPTIONAL

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

CAPACITY CLAIMED BY SIGNER

- ☐ Individual
- ☐ Corporate Officer

_____
Title(s)

- ☐ Partner(s) ☐ Limited ☐ General
- ☐ Attorney-In-Fact
- ☐ Trustee(s)
- ☐ Guardian/Conservator
- ☐ Other:

Signer is representing:
Name Of Person(s) Or Entity(ies)

_____

_____

DESCRIPTION OF ATTACHED DOCUMENT

_____
Title or Type of Document

_____
Number of Pages

_____
Date of Document

_____
Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for the Attorney-in-Fact. The Power-of-Attorney to local representatives of the bonding company must also be attached.

END OF BID BOND

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT — Civil Code § 1189

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)
) ss
County of Fresno)

On April 3,2026, before me, Bonnie Gonzalez, Notary Public, personally appeared Kim Wilson, 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.

BONNIE GONZALEZ
Notary Public - California
Fresno County
Commission # 2529452
My Comm. Expires Aug 8, 2029

(Seal)

Signature: Bonnie Gonzalez
Bonnie Gonzalez, 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 Fresno }

On 4/7/20 before me, MON SON LEE Notary Public,

Date (here insert name and title of the officer)

personally appeared Kristopher Sarnowsky

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.

MON SON LEE
Notary Public - California
Fresno County
Commission # 2525197
My Comm. Expires Jul 25, 2029

Signature: _____ (Seal)

OPTIONAL

Description of Attached Document

Title or Type of Document: _____ Number of Pages: _____

Document Date: _____ Other: _____

2015 Apostille Service, 707-992-5554 www.CaliforniaApostille.us California Mobile Notary Network www.CAMNN.com

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify of revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 3 day of April, 2026



MJ Pethick

Mary Jean Pethick
Vice President

TO REPORT A CLAIM WITH REGARD TO A SURETY BOND, PLEASE SUBMIT A COMPLETE DESCRIPTION OF THE CLAIM INCLUDING THE PRINCIPAL ON THE BOND, THE BOND NUMBER, AND YOUR CONTACT INFORMATION TO:

Zurich Surety Claims
1299 Zurich Way
Schaumburg, IL 60196-1056
reportsfclaims@zurichna.com
800-626-4577

Authenticity of this bond can be confirmed at bondvalidator.zurichna.com or 410-559-8790

ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Illinois, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Illinois (herein collectively called the "Companies"), by Christopher Nolan, Vice President, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Joseph SHEA, Trey BUSCH, Kim WILSON, Lyn GENITO, Bonnie GONZALEZ of Fresno, California,** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings,** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN AND SURETY COMPANY, and FIDETIYAND DEPOSIT COMPANY OF MARYLAND, this 12th day of January 2025.

ATTEST:
ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND



By: Christopher Nolan
Vice President

By: Dawn E. Brown
Secretary

State of Maryland
County of Baltimore

On this 12th day of January A.D. 2025, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **Christopher Nolan, Vice President and Dawn E. Brown, Secretary** of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, deposeth and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.



Genevieve M. Maison
Notary Public
My Commission Expire January 27, 2029

Authenticity of this bond can be confirmed at bondvalidator.zurichna.com or 410-559-8790

Work to be done by Subcontractor	Name of Subcontractor	Location of Business	CSLB Contractor License No.	DIR Registration Number	% of Work
Fence	Pisor Fence	Citrus Heights, Ca	316128	1000003166	.02
Play Install	The Parkitects	Fresno, Ca	1143661	2000015246	.07

Attach additional sheets if necessary)

Name of Bidder Stockbridge General Contracting, Inc.

Signature Kristopher Sarnowsky

Name and Title Kris Sarnowsky, Project Manager

Dated 04/06/2026

3. NONCOLLUSION DECLARATION

The undersigned declares:

I am the Representative of Stockbridge General Contracting, Inc., the party making the foregoing Bid.

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

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

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on 04/06/2026 [date], at Clovis [city], California [state].

Name of Bidder Stockbridge General Contracting, Inc.

Signature Kristopher Sarnowsky

Name Kris Sarnowsky

Title Project Manager

4. IRAN CONTRACTING ACT CERTIFICATION

(Public Contract Code section 2200 et seq.)

As required by California Public Contract Code Section 2204, the Contractor certifies subject to penalty for perjury that the option checked below relating to the Contractor's status in regard to the Iran Contracting Act of 2010 (Public Contract Code Section 2200 *et seq.*) is true and correct:

☒ The Contractor is not:

(1) identified on the current list of person and entities engaged in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203; or

(2) a financial instruction that extends, for 45 days or more, credit in the amount of $20,000,000 or more to any other person or entity identified on the current list of persons and entities engaging in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203, if that person or entity uses or will use the credit to provide goods or services in the energy sector in Iran.

☐ The City has exempted the Contractor from the requirements of the Iran Contracting Act of 2010 after making a public finding that, absent the exemption, the City will be unable to obtain the goods and/or services to be provided pursuant to the Contract.

☐ The amount of the Contract payable to the Contractor for the Project does not exceed $1,000,000.Signature:___

Printed Name: Kris Sarnowsky

Title: Project Manager

Firm Name: Stockbridge General Contracting, Inc.

Date: 04/06/2026

Note: In accordance with Public Contract Code Section 2205, false certification of this form shall be reported to the California Attorney General and may result in civil penalties equal to the greater of $250,000 or twice the Contract amount, termination of the Contract and/or ineligibility to bid on contracts for three years.

5. BIDDER INFORMATION AND EXPERIENCE FORM

INFORMATION ABOUT BIDDER

(Indicate not applicable ("N/A") where appropriate.)

NOTE: Where Bidder is a joint venture, pages shall be duplicated and information provided for all parties to the joint venture.

1.0 Name of Bidder: Stockbridge General Contracting, Inc.

2.0 Type, if Entity: Corporation

3.0 Bidder Address: 2972 Larkin Ave, Clovis, Ca 93612

Facsimile Number
559-292-7756

Telephone Number
559-292-2900

Email Address
KrisS@eliteteamoffices.com

4.0 How many years has Bidder's organization been in business as a Contractor? 15

5.0 How many years has Bidder's organization been in business under its present name? 15

5.1 Under what other or former names has Bidder's organization operated? N/A

6.0 If Bidder's organization is a corporation, answer the following:

6.1 Date of Incorporation: 07/22/2011

6.2 State of Incorporation: California

6.3 President's Name: Guy Stockbridge - CEO

6.4 Vice-President's Name(s): None

6.5 Secretary's Name: Guy Stockbridge

6.6 Treasurer's Name: Larissa Rojas - CFO

7.0 If an individual or a partnership, answer the following:

7.1 Date of Organization: _____

7.2 Name and address of all partners (state whether general or limited partnership):

_____

_____

_____

8.0 If other than a corporation or partnership, describe organization and name principals:

_____

_____

9.0 List other states in which Bidder's organization is legally qualified to do business.

CT, NV, FL, ID< UT, MS, VA, NM, MN

_____

_____

10.0 What type of work does the Bidder normally perform with its own forces?

Other Heavy and Civil Engineering Construction / Single-family Housing Construction

_____

11.0 Has Bidder ever failed to complete any work awarded to it? If so, note when, where, and why:

None

_____

12.0 Within the last five years, has any officer or partner of Bidder's organization ever been an officer or partner of another organization when it failed to complete a contract? If so, attach a separate sheet of explanation:

None

_____

13.0 List Trade References:

Creative Builders

King Khan Drilling & Construction

All Steel Fance

14.0 List Bank References (Bank and Branch Address):

Community West Bank (formally named Central Valley Community Bank)

600 Pollasky Avenue, Clovis, CA 93612

15.0 Name of Bonding Company and Name and Address of Agent:

Alliant Insurance Services

Kim Wilson - Surety Account Manager

9 E. River Park Place East Suite 310., Fresno, Ca 93720

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LIST OF CURRENT PROJECTS (BACKLOG)

[**Duplicate Page if needed for listing additional current projects.**]

Project	Description of Bidder's Work	Completion Date	Cost of Bidder's Work
CALWA PARK RENOVATIONS FRESNO, CA	EX PARK RENOVATION	7/2026	$5M
COLUMBUS PARK RENOVATIONS STOCKTON, CA	EX PARK RENOVATION	7/2026	$2.4M
MAXIE AND NEILSON PARKS FRESNO, CA	EX PARK RENOVATION	7/2026	$900K
MARCHETTI PARK ANTIOCH, CA	EX PARK RENOVATION	8/2026	$1.5M

LIST OF COMPLETED PROJECTS – LAST THREE YEARS

[**Duplicate Page if needed for listing additional completed projects.**]

Please include only those projects which are similar enough to demonstrate Bidder's ability to perform the required Work.

Project	Description of Bidder's Work	Completion Date	Cost of Bidder's Work
WINTON PARK WINTON, CA	Landscape, Irrigation, Maintenance, Concrete, Site Furnishings, Grading, AC Paving, Striping, Play Equipment, Shade Structures, Electrical, Underground Utilities, Drinking Fountains, Balifield Reno.	08/2024	$4,062,932
OCHOA PARK CERES, CA	Landscape, Irrigation, Maintenance, Concrete, Underground Utilities, Site Furnishings, Electrical, DG, Sports Court Surfacing, Shade Structures, Drinking Fountains	01/2025	$2,127,902
MILESTONE PARK LATHROP, CA	Landscape, Irrigation, Pip Rubber Surface, Play Equip, Install, Demo/Tree Removal, Electrical, Fence.	07/2024	$1,211,208
SHILLING PARK LATHROP, CA	Pip Rubber Surface, Landscape/Irrigation, Play Install, Water Play Install, Fence, Striping, Electrical	04/2025	$2,220,938
CITY CENTER FRESNO, CA	Landscape, Irrigation, Mobilization, SWPPP, Demolition, Site Grading, Electrical. Utilities, AC Paving, Striping, Signage, Amenities, Concrete,Hardscape and Fencing, Syntehic Turf, Unground Utilities, CMU Block Wall, Shade Structures, Shade Fabric, Wood Fencing and Walls	02/2025	$2,652,271
KOVACEVICH PARK ARVIN, CA	Mobilization, Clearing, Grubbing, Demo, Subgrade Prep, Curb and Gutter, Mow Curb, Sidewalk and Onsite Walk, ADA Ramps and Landings, AC Pavement, Signing, Striping, Marking, Curb, Cut Drain Pipe, Gravel Sump, Water Distr. System, Irrigation Reno, Electrical, Site Furnature, Play Area Reno, Basketball, Court Reno, Baseball Field Reno, Bleacher Foundation & Shade Structure, Restroom Reno, Soil Prep, Planting, Mulch, SWPP, Dust Control Plan, Playground Rubber Mulch, Dry Well Drain Box, Full PIP Rubber Surface Shade Structures, Play Equipment	12/2024	$2,138,430
BROADWAY PARK (SOUTH TOWER) FRESNO, CA	Mobilization, Mediator, SWPPP, Clearing & Grubbing, Grading, Erosion Control, Landscape Stormwater & Drainage, Sewer Line, Water Line Piping, Concrete, Pavers, Bench, Picnic Tables, Pilasters, Block Wall, Tubular Street Fencing & Gates, Concrete Stair, Cobble Set in Permeable Bed, Playground Equipment, Access Ramp & Detectable Warning Devices, Modular Sustended Soil Cells, Site Eltrical/Lighting, Planting, Irrigation Controls &Distro, Traffic Control, Detours & Access, Facilities & Operations, Supplemental Work Allowance	5/21/25	$2,451,248

EXPERIENCE AND TECHNICAL QUALIFICATIONS QUESTIONNAIRE

The Bidder shall identify the key personnel to be assigned to this project in a management, construction supervision or engineering capacity.

1. List each person's job title, name and percent of time to be allocated to this project:

KRISTOPHER SARNOWSKY, SR.PROJECT MANAGER 30%

NICK BRINKMAN, PROJECT MANAGER 75%

MON SON LEE , SUPERINTENDENT 100%

ASHLEY COBB, PROJECT ENGINEER 30%

2. Summarize each person's specialized education:

KRISTOPHER SARNOWSKY, DIPLOMA, SOME COLLEGE

NICK BRINKMAN, DIPLOMA, DEGREE

MON SON LEE, EIT, DEGREE

ASHLEY COBB, DIPLOMA

3. List each person's years of construction experience relevant to the project:

KRISTOPHER SARNOWSKY 20+

NICK BRINKMAN 20+

MON SON LEE 30+

ASHLEY COBB 10+

4. Summarize such experience:

PARK CONSTRUCTION, DEMOLITION, GRADING, UNDERGROUND UTILITIES

CONCRETE, AC PAVING, STRIPING, PIP RUBBER, ACRYLIC COURT SURFACING

FENCING, CMU, SITE FURNISHINGS, PLAY EQUIPMENT, SHADE STRUCTURES
ELECTRICAL, LANDSCAPE, IRRIGATION, PAVERS, EWF, SURVEY, STAKING

PAINTING, SPECIALTIES, TIE INS

Bidder agrees that personnel named in this Bid will remain on this Project until completion of all relevant Work, unless substituted by personnel of equivalent experience and qualifications approved in advance by the City.

Changes Occurring Since Prequalification

If any substantive changes have occurred since Bidder submitted its prequalification package for this Project, Bidder shall list them below. If none are listed, Bidder certifies that no substantive changes have occurred.

N/A

Additional Bidder's Statements:

If the Bidder feels that there is additional information which has not been included in the questionnaire above, and which would contribute to the qualification review, it may add that information in a statement here or on an attached sheet, appropriately marked:

SGC SELF PERFORMS, BMP, DEMO, GRADING, UTILITIES, SITE FURNISHINGS

WITH CAPACITY TO SELF PERFORM CONCRETE AND AC PAVING

SPECIALIZE IN PARK RENOVATION ALL OVER CALIFORNIA

$100M BOND CAPACITY, $15M YEARLY REVENUE

VERIFICATION AND EXECUTION

These Bid Forms shall be executed only by a duly authorized official of the Bidder:

I declare under penalty of perjury under the laws of the State of California that the foregoing information is true and correct:

Name of Bidder Stockbridge General Contracting, Inc.

Signature Kristopher Sarnowsky

Name Kris Sarnowsky

Title Project Manager

Date 4/7/26

Contractor License No. 967912

DIR Contractor Registration No. 1000008209

6. LOCAL BUSINESS ENTERPRISE (LBE) PARTICIPATION

CP240049 - GENERAL VANG PAO MEMORIAL PARK

A. GENERAL

This project is subject to the policies and requirements established by the City of Merced. The City is committed to ensuring full and equitable participation by Local Business Enterprises (LBEs) in the provision of all goods and services to the City or Agency on a contractual basis. This outreach program is set forth in these Special Provisions. Bidders shall be fully informed concerning the requirements of this program. Failure to comply with the Good Faith Effort Outreach Program will render the bid non-responsive.

Please note that in accordance with the State Labor Law, the bidder is required to fill out the list of subcontractors **(Page 13 and 14)** at time of bid for any branch of work that is to be accomplished by persons or companies other than the general Contractor. This requirement is considered a totally separate issue from meeting the LBE requirements.

B. POLICY

The subcontracting outreach policy requires the bidder of this project to make a "Good Faith Effort" to obtain sub-bid participation by LBEs which is anticipated by the City to produce the level of LBE participation as shown in the "Notice Inviting Bids".

C. DEFINITIONS

1. Local Business Enterprise (LBE): An LBE is defined as a business firm with a valid non-delinquent City of Merced business license and with fixed offices or distribution points within the County of Merced.

2. Certification as an LBE: A business is automatically considered a certified LBE with the City of Merced if the business has a permanent physical location within Merced County and has an active City business license.

3. Good Faith Effort: The bidder must take affirmative steps prior to bid opening to ensure that a maximum effort is made to recruit LBE sub-bidder/subcontractors. LBEs must be considered along with other business enterprises whenever possible as sources of supplies, construction and other services. The required affirmative steps for Good Faith Effort Certification and Documentation are outlined in Paragraph D herein.

4. Subcontractor: For the purpose of this program, the term "Subcontractor" denotes an agreement between the prime Contractor and an individual, firm or corporation for the performance of a particular portion(s) of the work for which the prime Contractor has obligated itself. Subcontractors must have a valid California Contractor's License or Professional License. For purposes of meeting the LBE requirement, other work including but not limited to trucking, equipment rentals, or any service rendered by local firms for the project shall also be included.

5. LBE Participation Credit: This applies to recognition as an LBE.
   a. Work performed by a prime Contractor who is an LBE is credited 100%

b. Work performed by a prime Contractor who is not an LBE will not be considered for credit in computing any expected levels of LBE participation established for this project. The prime Contractor will be required to make good faith efforts to obtain reasonably expected participation levels through subcontracting or materials and supplies acquisition.

c. Credit for materials and/or supplies purchased locally shall be considered at 100% of the amount to be paid to the local vendor for such materials/supplies in computing the expected levels of LBE participation.

D. GOOD FAITH EFFORT CERTIFICATION AND DOCUMENTATION

It is the policy of the City of Merced to provide LBEs an equal opportunity to participate in the performance of all City contracts. Bidders shall assist the City in implementing this policy by taking all reasonable steps to ensure that any qualified available business enterprise including LBEs, have an equal opportunity to compete for and participate in City contracts. A bidder's good faith efforts to reach out to LBEs shall be determined from documentation of the level of effort put into achieving the following factors. Certification of Good Faith Effort must be returned with the bid. The low bidder shall submit detailed Good Faith Effort Documentation by 5:00 pm within two working days after the bid opening to the Engineering Department, 678 West 18th Street, Merced, California, 95340. Failure to submit the required Good Faith Effort Documentation by 5:00 pm within two working days after the day of the bid opening will render the bid non-responsive. Any other bidders who may be considered for award in the event that the low bidder is considered non-responsive shall submit the detailed Good Faith Effort Documentation by 5:00 pm within two working days after receipt of a request from the Engineering Department.

Good faith shall be determined by the following:

1. The bidder has made a good faith effort to obtain sub-bid participation by LBEs that could reasonably be expected to produce a level of participation by LBEs, as called for in the Notice Inviting Bids.

2. The bidder has identified and selected specific work items in the project to be performed by sub-bidders/subcontractors in order to provide an opportunity for participation by LBEs. Upon making this determination, the bidder subdivided the total contract work requirements into smaller portions or quantities to permit maximum active participation of LBEs. If the bidder has identified an amount of subcontracting work less than the proposed LBE goal or intends to do all of the project with his own forces, this shall not disqualify his bid. However, the bidder should make a good faith effort to maximize use of local services.

3. The City will provide a plan holder's list for this project upon request to the Engineering Department, phone (209) 385-6846 and provide outreach to local businesses regarding subcontracting opportunities through the Building Exchanges. However, the bidder should also provide written notice of its interest in receiving sub-bids on the contract to those business enterprises, including LBEs having an interest in participation in the selected work items, through builder's exchanges and the trade press.

4. The bidder has documented efforts to follow-up initial solicitations of sub-bid interest by contacting the affected business enterprises to determine with certainty whether said enterprises were interested in performing specific portions of the project work.

5. The bidder has negotiated in good faith with interested LBEs and did not unjustifiably reject as unsatisfactory bids or proposals prepared by any enterprise, as determined by the Engineering Department. As documentation the bidder must submit a list of all sub-bidders for each item of work solicited, including dollar amounts of potential work for LBEs.

The anticipated levels of LBE participation shall not by itself become the basis for any bidder's disqualification or determination of lack of Good Faith Effort. Adequacy of a bidder's good faith effort will be determined by the City Engineer after consideration of the factors of good faith as set forth above. Attached hereto is a copy of the Certification of Good Faith Effort due with the bid and the detailed evaluation sheet (Good Faith Effort Documentation) used by the City to assist in determining the adequacy of a bidders good faith effort.

All Bidders shall submit a completed Certification of Good Faith Effort with their bid. Detailed Good Faith Effort Documentation may be submitted with the bid or shall be submitted by the low bidder by 5:00 pm within two working days after the day of the bid opening. Failure to do so will render the bid non-responsive. The Engineering Department, in its review of the Good Faith Effort Documentation may request additional information to validate and/or clarify that a good faith effort was adequately made. Such information shall be submitted promptly upon request. If the low bid is considered non-responsive, additional bidders will be asked to provide Good Faith effort Documentation by 5:00 pm within two days after the day of receipt of request from the Engineering Department.

E. AWARD OF CONTRACT

The City reserves the right to reject any and all bids. The award of a contract will be to the lowest responsible bidder whose proposal complies with all requirements prescribed herein. This includes compliance with the required good faith effort outreach program. A positive and adequate demonstration to the satisfaction of the City of a good faith effort is a condition for being eligible for award of the contract.

In the event that the City considers awarding away from the apparent low bidder because of the bidder's failure to satisfy the City with its good faith efforts, the City shall, if requested, and prior to the award of the contract, afford the bidder an opportunity to present further evidence to the City of the bidder's good faith effort.

(This form must be returned with bid)

CITY OF MERCED

CP240049 - GENERAL VANG PAO MEMORIAL PARK

CERTIFICATION OF GOOD FAITH EFFORT

Bidders are required to initial the underlined space provided to the left of each applicable provision if the bidder achieved compliance and submit this certification checklist with the bid to the Office of the Purchasing Agent, at 2525 "O" Street, Merced, California 95340. Failure to submit the required checklist with the bid will render the bid non-responsive.

1. _____ The bidder is a certified Local Business Enterprise and is therefore automatically qualified for 100% credit. No other portions of this Certification of Good Faith Effort form (**except date, signature and contractor name**) are required to be filled out and detailed documentation is not required.

(If item 1 above is not checked, please proceed)

2. _____ The bidder is not a Local Business Enterprise. The bidder hereby certifies that his actual LBE participation, estimated at ___%, exceeds the goal listed in the Notice Inviting Bids. No other portions of this Certification of Good Faith Effort form (**except date, signature and contractor name**) are required to be filled out. Within two days after bid opening, only item 7 of the detailed Good Faith Effort Documentation, listing LBEs who will be subcontractors on this project, is required if bidder is the low bidder. (If the bidder has checked this item and after the bids are opened, it is determined that the bidder has not actually met the goal, the bidder must submit a new certification form completely documenting the bidder has made a good faith effort as required below.)

(If item 1 or 2 is not checked, you must complete the remainder of this form)

3. X The bidder has made a good faith effort to obtain sub-bid participation by LBEs which could reasonably be expected to produce a level of participation by LBEs as called for in the Notice Inviting Bids.

4. _____ The bidder has identified and selected specific work items in the project to be performed by sub bidder/subcontractors in order to provide an opportunity for participation by LBEs. Upon making this determination, the bidder subdivided the total contract work requirements into smaller portions or quantities to permit maximum active participation of LBEs. If the bidder's total identified opportunities for subcontracting are less than the requested participation, this shall not disqualify the bid. However, bidder must make a good faith effort on all identified subcontracting.

5. _____ The bidder has documented efforts to follow-up initial solicitations of sub-bid interest by contacting the affected business enterprises to determine with certainty whether said enterprises were interested in performing specific portions of the project work.

6. _____ The bidder has negotiated in good faith with interested LBEs and did not unjustifiably reject as unsatisfactory bids or proposals prepared by any enterprise, as determined by the City. As documentation due after the bid, the bidder must submit a list of all sub-bidders for each item of work solicited, including dollar amounts of potential work for LBEs.

7. _____ The bidder estimates that his total LBE participation will be _____%. (Actual amount to be provided with detailed documentation due after bid).

CERTIFICATION

I have used this checklist and certify that positive steps were taken and documented to ensure that all available LBEs have had an equal opportunity to compete for and participate in this project. I am submitting this Certification of Good Faith Effort checklist herewith as evidence of the "Good Faith Effort" made. I understand that if I am the low bidder I am required to submit detailed documentation (unless I am a certified LBE or only the list of LBE's if I have met the goal) by 5:00 pm within two working days after the day of the bid opening or if my bid is to be considered for award, I am required to submit detailed documentation by 5:00 pm. within two working days after receiving the request from the Engineering Department. I understand that if my documentation does not demonstrate that I have complied with the requirements of the "Good Faith Effort Outreach Program" as required by these bid specifications or if I do not submit adequate documentation, that my bid will be deemed non-responsive by the City.

4/7/20	Kristopher Sarnowsky
Date	Officer's Signature
Stockbridge General Contracting, Inc.	Kris Sarnowsky, Project Manager
Firm Name:	Officer's Name and Title (Type or Print)

(Detailed documentation to be submitted within two working days after bid opening by low bidder or as requested)

CITY OF MERCED

CP240049 - GENERAL VANG PAO MEMORIAL PARK

Name of Bidder: Stockbridge General Contracting, Inc.

GOOD FAITH EFFORT DOCUMENTATION

1. **If Bidder is an LBE, the bidder is not required to submit this form. If Bidder is not an LBE, and has actually met the required LBE goal, he only needs to fill out item 7 of this form and sign and date this form.**

2. List names and dates of advertisement of each newspaper and trade paper in which the bidder placed a request for LBE participation for this project.

Central California Builders Exchange 04/06/2026

3. List names and dates of all certified LBEs contacted or who contacted you for this project and the dates and methods used for the follow-up solicitation.

NAME OF LBE SOLICITED	DATE OF SOLICITATION	NAME OF LBE SOLICITED	DATE OF SOLICITATION

(This form must be returned with bid)

CITY OF MERCED

CP240049 - GENERAL VANG PAO MEMORIAL PARK

CERTIFICATION OF GOOD FAITH EFFORT

Bidders are required to initial the underlined space provided to the left of each applicable provision if the bidder achieved compliance and submit this certification checklist with the bid to the Office of the Purchasing Agent, at 2525 "O" Street, Merced, California 95340. Failure to submit the required checklist with the bid will render the bid non-responsive.

1. _____ The bidder is a certified Local Business Enterprise and is therefore automatically qualified for 100% credit. No other portions of this Certification of Good Faith Effort form (**except date, signature and contractor name**) are required to be filled out and detailed documentation is not required.

   (If item 1 above is not checked, please proceed)

2. X The bidder is not a Local Business Enterprise. The bidder hereby certifies that his actual LBE participation, estimated at 18 %, exceeds the goal listed in the Notice Inviting Bids. No other portions of this Certification of Good Faith Effort form (**except date, signature and contractor name**) are required to be filled out. Within two days after bid opening, only item 7 of the detailed Good Faith Effort Documentation, listing LBEs who will be subcontractors on this project, is required if bidder is the low bidder. (If the bidder has checked this item and after the bids are opened, it is determined that the bidder has not actually met the goal, the bidder must submit a new certification form completely documenting the bidder has made a good faith effort as required below.)

   (If item 1 or 2 is not checked, you must complete the remainder of this form)

3. X The bidder has made a good faith effort to obtain sub-bid participation by LBEs which could reasonably be expected to produce a level of participation by LBEs as called for in the Notice Inviting Bids.

4. _____ The bidder has identified and selected specific work items in the project to be performed by sub bidder/subcontractors in order to provide an opportunity for participation by LBEs. Upon making this determination, the bidder subdivided the total contract work requirements into smaller portions or quantities to permit maximum active participation of LBEs. If the bidder's total identified opportunities for subcontracting are less than the requested participation, this shall not disqualify the bid. However, bidder must make a good faith effort on all identified subcontracting.

5. _____ The bidder has documented efforts to follow-up initial solicitations of sub-bid interest by contacting the affected business enterprises to determine with certainty whether said enterprises were interested in performing specific portions of the project work.

6. _____ The bidder has negotiated in good faith with interested LBEs and did not unjustifiably reject as unsatisfactory bids or proposals prepared by any enterprise, as determined by the City. As documentation due after the bid, the bidder must submit a list of all sub-bidders for each item of work solicited, including dollar amounts of potential work for LBEs.

7. X The bidder estimates that his total LBE participation will be 18 %. (Actual amount to be provided with detailed documentation due after bid).

CERTIFICATION

I have used this checklist and certify that positive steps were taken and documented to ensure that all available LBEs have had an equal opportunity to compete for and participate in this project. I am submitting this Certification of Good Faith Effort checklist herewith as evidence of the "Good Faith Effort" made. I understand that if I am the low bidder I am required to submit detailed documentation (unless I am a certified LBE or only the list of LBE's if I have met the goal) by 5:00 pm within two working days after the day of the bid opening or if my bid is to be considered for award, I am required to submit detailed documentation by 5:00 pm. within two working days after receiving the request from the Engineering Department. I understand that if my documentation does not demonstrate that I have complied with the requirements of the "Good Faith Effort Outreach Program" as required by these bid specifications or if I do not submit adequate documentation, that my bid will be deemed non-responsive by the City.

4/8/26
Date

Kristopher Sarnowsky
Officer's Signature

Stockbridge General Contracting Inc.
Firm Name:

Kristopher Sarnowsky - Project Manager
Officer's Name and Title (Type or Print)

(Detailed documentation to be submitted within two working days after bid opening by low bidder or as requested)

CITY OF MERCED

CP240049 - GENERAL VANG PAO MEMORIAL PARK

Name of Bidder: Stockbridge General Contracting Inc.

GOOD FAITH EFFORT DOCUMENTATION

1. **If Bidder is an LBE, the bidder is not required to submit this form. If Bidder is not an LBE, and has actually met the required LBE goal, he only needs to fill out item 7 of this form and sign and date this form.**

2. List names and dates of advertisement of each newspaper and trade paper in which the bidder placed a request for LBE participation for this project.

CENTRAL CALIFORNIA BUILDERS EXCHANGE 04/06/2026

CENTRAL CALIFORNIA BUILDERS EXCHANGE 03/26/2026

3. List names and dates of all certified LBEs contacted or who contacted you for this project and the dates and methods used for the follow-up solicitation.

NAME OF LBE SOLICITED	DATE OF SOLICITATION	NAME OF LBE SOLICITED	DATE OF SOLICITATION
BADILLO CONSTRUCTION	4/1/2026		
OLD LAKE ROAD MILL AND LUMBER	4/6/26		
CEMEX	4/1/26		

4. List items of work for which the bidder subbids or materials to be supplied by LBEs. If work items have been broken down into smaller portions, please indicate them below.

ITEMS OF WORK	ITEMS OF SUPPLIES
CONCRETE CONSTRUCTION	WOOD BENCHES AND TABLE

5. List the names of LBEs who submitted for any of the work indicated above which were not accepted, a summary of the bidder's discussions and/or negotiations with them, the name of the subcontractor or supplier that was selected for that portion of the work, and the reasons for the bidder's choice.

   a. Names of Rejected LBEs:

   NONE N/A

   b. Summary of Discussions and/or Negotiations:

   NONE N/A

c. List Names of subcontractors or suppliers that were selected over the rejected LBEs listed above and the reasons for that choice:

BADILLO CONSTRUCTION AND ENGINEERING, INC. HAD A GOOD CONCRETE PROPOSAL

OLD LAKE ROAD MILL AND LUMBER WAS A SPECIFIED SUPPLIER

6. List any additional data to support a demonstration of good faith effort:

SOLICITING ON THE BUILDERS EXCHANGE

EMAIL SOLICITATIONS TO BUILDERS EXHANGE ACTIVITY, CONTRACTORS THAT VIEWED THE PROJECT

NOTE: USE ADDITIONAL SHEETS OF PAPER IF NECESSARY. APPROPRIATE DOCUMENTATION SUCH AS COPIES OF NEWSPAPER ADS, LETTERS SOLICITING BIDS, AND TELEPHONE LOGS SHOULD ACCOMPANY THIS FORM.

LOCAL BUSINESS ENTERPRISE (LBE) PARTICIPATION CALCULATIONS

CITY OF MERCED

CP240049 - GENERAL VANG PAO MEMORIAL PARK

Name of Bidder: STOCKBRIDGE GENERAL CONTRACTING INC.

WORK ITEMS	IDENTIFIED WORK ITEMS	LBE'S NAME	ITEM TOTAL
			$
			$
			$
8,9,10,11,15 23,24,25 B3,B4,B5,B7	CONCRETE CONSTRUCTION	BADILLO CONSTRUCTION & ENGINEERING INC.	$ $274,145
			$
			$
			$
			$

TOTAL OF WORK ITEMS $ 274,145

SUPPLY ITEMS	IDENTIFIED SUPPLY ITEMS	LBE'S NAME	ITEM TOTAL
			$
A13,A14	LIVE EDGE BENCH AND TABLE	OLD LAKE ROAD MILL AND LUMER	$ 11,341.50
			$
			$
			$
			$
			$
			$

TOTAL OF SUPPLY ITEMS $ 11,341.50

CALCULATIONS

A) Total Amount of Work Items =$ 274,145

B) Total Amount of Supply Items =$ 11,341.50

C) Total Amount of LBE Recognition (A + B) =$ 285,486.50

D) Total Bid Amount from Bid Proposal GRAND TOTAL BASE+ ALT1+ALT 2 =$ 1,515,018

E) Percent LBE Participation (C/D x 100) = $ 18.84

To the best of my knowledge, I believe the LBE Participation Calculations are true and accurate.

Kristopher Sarnowsky

Signature of Bidder

Kristopher Sarnowsky

Name of Bidder (Print or Type)

4/8/26

Date

4. List items of work for which the bidder subbids or materials to be supplied by LBEs. If work items have been broken down into smaller portions, please indicate them below.

ITEMS OF WORK	ITEMS OF SUPPLIES

5. List the names of LBEs who submitted for any of the work indicated above which were not accepted, a summary of the bidder's discussions and/or negotiations with them, the name of the subcontractor or supplier that was selected for that portion of the work, and the reasons for the bidder's choice.

   a. Names of Rejected LBEs:

   b. Summary of Discussions and/or Negotiations:

c. List Names of subcontractors or suppliers that were selected over the rejected LBEs listed above and the reasons for that choice:

_____

_____

_____

_____

_____

6. List any additional data to support a demonstration of good faith effort:

_____

_____

_____

_____

_____

_____

NOTE: USE ADDITIONAL SHEETS OF PAPER IF NECESSARY. APPROPRIATE DOCUMENTATION SUCH AS COPIES OF NEWSPAPER ADS, LETTERS SOLICITING BIDS, AND TELEPHONE LOGS SHOULD ACCOMPANY THIS FORM.

LOCAL BUSINESS ENTERPRISE (LBE) PARTICIPATION CALCULATIONS

CITY OF MERCED

CP240049 - GENERAL VANG PAO MEMORIAL PARK

Name of Bidder: Stockbridge General Contracting, Inc.

WORK ITEMS	IDENTIFIED WORK ITEMS	LBE'S NAME	ITEM TOTAL
			$
			$
			$
			$
			$
			$
			$
			$

TOTAL OF WORK ITEMS $_____

SUPPLY ITEMS	IDENTIFIED SUPPLY ITEMS	LBE'S NAME	ITEM TOTAL
			$
			$
			$
			$
			$
			$
			$
			$

TOTAL OF SUPPLY ITEMS $_____

CALCULATIONS

A) Total Amount of Work Items =$_____

B) Total Amount of Supply Items =$_____

C) Total Amount of LBE Recognition (A + B) =$_____

D) Total Bid Amount from Bid Proposal =$_____

E) Percent LBE Participation (C/D x 100) = $_____

To the best of my knowledge, I believe the LBE Participation Calculations are true and accurate.

Kristyna Sarnowsky

Signature of Bidder

Kris Sarnowsky

Name of Bidder (Print or Type)

4/7/20

Date

7. CERTIFICATION LABOR CODE SECTION 1861

I, the undersigned Contractor, am aware of the provisions of Section 3700, et seq., 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 the Code, and I, the undersigned Contractor, agree to and will comply with such provisions before commencing the performance of the Work on this Contract.

Stockbridge General Contracting, Inc.
[INSERT CONTRACTOR NAME]

By: Kristopher Sarnowsky
Signature

Kris Sarnowsky
Name (Print)

Project Manager
Title (Print)

8. PUBLIC WORKS CONTRACTOR REGISTRATION CERTIFICATION

Pursuant to Labor Code sections 1725.5 and 1771.1, all contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a contract to perform public work must be registered with the Department of Industrial Relations. See http://www.dir.ca.gov/Public-Works/PublicWorks.html for additional information.

No bid will be accepted nor any contract entered into without proof of the contractor's and subcontractors' current registration with the Department of Industrial Relations to perform public work.

Contractor hereby certifies that it is aware of the registration requirements set forth in Labor Code sections 1725.5 and 1771.1 and is currently registered as a contractor with the Department of Industrial Relations.[1]

Name of Contractor: Stockbridge General Contracting, Inc.

DIR Registration Number: 1000008209

DIR Registration Expiration: 06/30/2027

Small Project Exemption: X Yes or _____ No

Unless Contractor is exempt pursuant to the small project exemption, Contractor further acknowledges:

Contractor shall maintain a current DIR registration for the duration of the project.

- Contractor shall include the requirements of Labor Code sections 1725.5 and 1771.1 in its contract with subcontractors and ensure that all subcontractors are registered at the time of bid opening and maintain registration status for the duration of the project.
- Failure to submit this form or comply with any of the above requirements may result in a finding that the bid is non-responsive.

Name of Contractor Stockbridge General Contracting, Inc.

Signature Kristopher Sarnowsky

Name and Title Kris Sarnowsky - Project Manager

Dated 4/7/26

[1] If the Project is exempt from the contractor registration requirements pursuant to the small project exemption under Labor Code Sections 1725.5 and 1771.1, please mark "Yes" in response to "Small Project Exemption."

FILED
Secretary of State
State of California
A0852712
Filing Number
02/12/2021
Filing Date

RESTATED ARTICLES OF INCORPORATION

The undersigned certify that:

1. They are the president and the secretary, respectively, of STOCKBRIDGE GENERAL CONTRACTING, INC., a California corporation, with California Entity Number 3399758.

2. The Articles of Incorporation of this corporation are amended and restated to read as follows:

Corporate Name.

1. The name of the corporation is STOCKBRIDGE GENERAL CONTRACTING, INC.

Purpose Statement.

2. The purpose of the corporation is to engage in any lawful act or activity for which a corporation may be organized under the General Corporation Law of California other than the banking business, the trust company business or the practice of a profession permitted to be incorporated by the California Corporations Code.

Shares.

4. This corporation is authorized to issue only one class of shares of stock.

The total number of shares which this corporation is authorized to issue is One Million (1,000,000).

Number of Shareholders.

5. This corporation is a **Close Corporation.** All of the corporation's issued shares of stock, of all classes, will be held of record by not more than thirty-five (35) persons.

3. The foregoing amendment and restatement of Articles of Incorporation has been duly approved by the board of directors.

4. The foregoing amendment and restatement of Articles of Incorporation has been duly approved by the required vote of shareholders in accordance with Section 902, California Corporations Code. The total number of outstanding shares of the corporation is 147.058. The number of shares voting in favor of the amendment equaled or exceeded the vote required. The percentage vote required was 100%.

We further declare under penalty of perjury under the laws of the State of California that the matters set forth in this certificate are true and correct of our own knowledge.

Date: January 28, 2021

Guy Stockbridge, President

Guy Stockbridge, Secretary

BA20260229648

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

California Secretary of State
1500 11th Street
Sacramento, California 95814
(916) 657-5448

For Office Use Only

-FILED-

File No.: BA20260229648
Date Filed: 1/29/2026

Entity Details

Corporation Name	STOCKBRIDGE GENERAL CONTRACTING, INC.
Entity No.	3399758
Formed In	CALIFORNIA

Street Address of Principal Office of Corporation

Principal Address	2972 LARKIN AVE. CLOVIS, CA 93612

Mailing Address of Corporation

Mailing Address	2972 LARKIN AVE. CLOVIS, CA 93612
Attention	

Street Address of California Office of Corporation

Street Address of California Office	2972 LARKIN AVE. CLOVIS, CA 93612

Officers

Officer Name	Officer Address	Position(s)
Guy Stockbridge	2972 LARKIN AVE. CLOVIS, CA 93612	Chief Executive Officer, Secretary
Larissa Rojas	2972 LARKIN AVE. CLOVIS, CA 93612	Chief Financial Officer

Additional Officers

Officer Name	Officer Address	Position	Stated Position
None Entered			

Directors

Director Name	Director Address
Guy Stockbridge	2972 LARKIN AVE. CLOVIS, CA 93612

The number of vacancies on Board of Directors is: 0

Agent for Service of Process

Agent Name	Guy Stockbridge
Agent Address	2972 LARKIN AVE. CLOVIS, CA 93612

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

B4369-1045 01/29/2026 11:31 AM 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.

Eryn Perez	*01/29/2026*
Signature	Date

B4369-1046 01/29/2026 11:31 AM Received by California Secretary of State

STOCKBRIDGE
GENERAL CONTRACTING, INC.

SIGNATURE AUTHORIZATION LETTER

Stockbridge General Contracting, Inc.
2972 Larkin Ave.
Clovis, CA 93612

To Whom It May Concern,

The following individuals are authorized by Stockbridge General Contracting, Inc. to sign Master Service Agreements, subcontracts, and all other contract-related documents to perform business as Stockbridge General Contracting, Inc.

Name: Kris Sarnowsky Signature: Kristofer Sarnowsky Date: 11/17/25

Title: Project Manager Email: KrisS@eliteteamoffices.com

President: Guy Stockbridge Signature: _____ Date: 12/23/25

Email: Guys@eliteteamoffices.com

2972 Larkin Ave., Ste 101
Clovis, California 93612
Lic.# 967612

Office (559) 292-2929
Fax (559) 476-1772
www.stockbridgegcinc.com

GENERAL CONSTRUCTION
Commercial Construction
Residential Construction
Site Work
Grading & Paving
Underground

APPENDIX

CITY OF MERCED STANDARD DESIGNS

THE FOLLOWING STANDARDS ARE FOR REFERENCE ONLY
REFER TO THE CITY OF MERCED WEBSITE FOR THE COMPLETE LISTING OF STANDARD DETAILS

https://www.cityofmerced.org/departments/engineering/standard-designs/

STATE GENERAL PREVAILING WAGE RATES

General prevailing wage determination
Made by the Director of Industrial Relations

Pursuant to California Labor Code part 7,
Chapter 1, article 2, sections 1770, 1773, and 1773.1

State of California Department of Industrial Relations Website:
http://www.dir.ca.gov/OPRL/PWD/index.htm

REGULATION VIII – FUGITIVE PM10 PROHIBITIONS

San Joaquin Valley
Air Pollution Control District

COMPLIANCE ASSISTANCE BULLETIN
August 2006

Regulation VIII – Fugitive PM10 Prohibitions
Requirements on Paved and Unpaved Public Roads

District Rule 8061(*Paved and Unpaved Roads*) of Regulation VIII (*Fugitive PM10 Prohibitions*) specifies the design criteria for constructing new or modifying existing paved roads and the types of control measures required for limiting fugitive dust emissions from unpaved roads and shoulders. Several compliance dates and deadlines described in the rule apply specifically to city, county, and state agencies. The purpose of this bulletin is to summarize the new requirements for public agencies that own or maintain paved and unpaved roads. The entire rule may be found at www.valleyair.org/rules/1ruleslist.htm - reg8.

- **Constructing New Unpaved Roads:** Effective October 1, 2004, constructing a new unpaved road is prohibited in all urban areas unless the unpaved road is used for a temporary activity that does not exceed six months of use over a consecutive three-year period. Temporary activities may include construction access roads, special events, or traffic detours. The unpaved surface must be maintained in a stabilized condition at all times in order to control fugitive emissions.

- **PM10-Efficient Street Sweepers**: These requirements apply to the routine cleaning of existing paved public roads within urban areas. Effective July 1, 2005, an agency or its contractor may only purchase PM10-efficient street sweepers for their fleets and at least one sweeper must be placed into service by July 1, 2008. PM10-efficient street sweepers are to be used along routine street sweeper routes, which have been predetermined and prioritized by the agency as having paved curbs with the greatest actual or potential for dirt and silt loading. If an agency cannot meet these provisions due to budgetary constraints, a statement of financial hardship must be submitted to the District and the USEPA for review and approval.

- **Cleaning Paved Roads after a Storm Event:** Within 24 hours of discovery, the agency or contractor responsible for maintaining the roadway must remove the accumulated mud and dirt from the paved road or restrict vehicles from traveling over the mud and dirt until the materials can be removed. This requirement applies if the accumulated mud and dirt is a result of wind or water erosion and runoff, is at least one inch thick, and covers an area of at least 50 square feet. Cleanup may be performed manually with a shovel and broom, or with a conventional or PM10-efficient street sweeper, but must be performed in a manner that minimizes fugitive dust. Using a blowing device or a dry rotary brush or broom is prohibited. Redirecting traffic is one way to restrict vehicles from traveling over the mud and dirt. Upon agency notification, the District may approve an extension of the 24-hour cleanup requirement if restricting vehicles is deemed unsafe and removing the mud and dirt is not possible within 72 hours because crews are not available over a weekend or holiday.

Northern Region Office
4800 Enterprise Way
Modesto, CA 95356-8718
(209) 557-6400 ♦ FAX (209) 557-6475

Central Region Office
1990 East Gettysburg Avenue
Fresno, CA 93726-0244
(559) 230-6000 ♦ FAX (559) 230-6062

Southern Region Office
2700 "M" Street, Suite 275
Bakersfield, CA 93301-2373
(661) 326-6900 ♦ FAX (661) 326-6985

- **Posting Speed Limit Signs on Unpaved Roads:** Effective October 1, 2005, public agencies must establish a maximum speed limit of 25 miles per hour for the unpaved roads under their jurisdictions. This requirement applies to the unpaved road segments where vehicle traffic reaches or exceeds 26 annual average daily trips (AADT). At a minimum, agencies are to post at least one speed limit sign in each direction for every mile of unpaved road located within an urban area, and one sign in each direction for every two miles of unpaved road within a rural area. For example, an unpaved road located within an urban area that is ½ mile long and exceeds 26 AADT requires at least one sign posted in each direction. The unpaved surface must be maintained in a stabilized condition at all times in order to control fugitive emissions.

- **Paving Existing Unpaved Roads and Paving or Stabilizing Unpaved Shoulders:** On January 1, 2005, agencies provided the District with a report listing each unpaved road located within an urban area and each paved road with unpaved shoulders within urban and rural areas. On July 1, 2005, agencies provided a report listing each unpaved road located within a rural area. These reports include the length in miles and the AADT for each subject road and unpaved shoulder within the agency's jurisdiction.

  As of January 1, 2005, agencies are to pave an annual average of 20 percent of the unpaved roads listed in their urban area unpaved road report, thereby paving 100 percent of these unpaved roads by January 1, 2010. This requirement does not apply to rural unpaved roads.

  In urban areas, agencies are to pave or stabilize at least four-feet of unpaved shoulders on at least 50 percent of the existing paved roadways having the highest AADT. In rural areas, this is required on at least 25 percent of the existing paved roadways with the highest AADT. Compliance with these provisions must be complete by January 1, 2010.

  If an agency cannot meet these provisions due to budgetary constraints, a statement of financial hardship must be submitted to the District and the USEPA for review and approval.

- **Incremental Progress Reports:** Due on April 1 of each year, from 2006 through 2010, agencies must report their incremental progress to the District by reporting the total miles of urban unpaved roads that were paved over the previous calendar year, the total miles of unpaved shoulders that were paved or stabilized over the previous calendar year, and the percentage of cumulative miles treated relative to the original reports.

For more information please contact the Compliance Department of the District office nearest to you. Information on Regulation VIII is available on the District's website at:

www.valleyair.org

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

COMPLIANCE ASSISTANCE BULLETIN
April 2007

Fugitive Dust Control at Construction Sites: New Requirements

Regulation VIII, Fugitive PM10 Prohibitions, of the District's Rules and Regulations apply to many activities that generate fugitive dust, and particularly to construction sites.

Fugitive dust is emitted into the air by activities that disturb the soil, such as earthmoving and vehicular/equipment traffic on unpaved surfaces. Windblown dust is also of concern where soil has been disturbed at construction sites.

The District adopted Regulation VIII in 1993 and its most recent amendments became effective on October 1, 2004. This is a basic summary of the regulation's requirements as they apply to construction sites.

These regulations affect all workers at a regulated construction site, including everyone from the landowner to the subcontractors. Violations of Regulation VIII are subject to enforcement action including fines.

Visible Dust Emissions (VDE) may not exceed 20% opacity during periods when soil is being disturbed by equipment or by wind at any time. Visible Dust Emissions opacity of 20% means dust that would obstruct an observer's view of an object by 20%. District inspectors are state certified to evaluate visible emissions. Dust control may be achieved by applying water before/during earthwork and onto unpaved traffic areas, phasing work to limit dust, and setting up wind fences to limit wind blown dust.

Soil Stabilization is required at regulated construction sites after normal working hours and on weekends and holidays. This requirement also applies to inactive construction areas such as phased projects where disturbed land is left unattended. Applying water to form a visible crust on the soil and restricting vehicle access are often effective for short-term stabilization of disturbed surface areas. Long-term methods including applying dust suppressants and establishing vegetative cover.

Carryout and Trackout occur when materials from emptied or loaded vehicles falls onto a paved surface or shoulder of a public road or when materials adhere to vehicle tires and are deposited onto a paved surface or shoulder of a public road. Should either occur, the material must be cleaned up at least daily, and immediately if it extends more than 50 feet from the exit point onto a paved road. The appropriate clean-up methods require the complete removal and cleanup of mud and dirt from the paved surface and shoulder. Using a blower device or dry sweeping with any mechanical device other than a PM10-efficient street sweeper is a violation. Larger construction sites, or sites with a high amount of traffic on one or more days, must prevent carryout and trackout from occurring by installing gravel pads, grizzlies, wheel washers, paved interior roads, or a combination thereof at each exit point from the site. In many cases, cleaning up trackout with water is also prohibited as it may lead to plugged storm drains. Prevention is the best method.

Unpaved Access and Haul Roads, as well as unpaved vehicle and equipment traffic areas at construction sites must have dust control. Speed limit signs limiting vehicle speed to 15 mph or less at construction sites must be posted every 500 feet on uncontrolled and unpaved roads.

Northern Region Office
4800 Enterprise Way
Modesto, CA 95356-8718
(209) 557-6400 ♦ FAX (209) 557-6475

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(559) 230-6000 ♦ FAX (559) 230-6062

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2700 "M" Street, Suite 275
Bakersfield, CA 93301-2373
(661) 326-6900 ♦ FAX (661) 326-6985

Storage Piles and Bulk Materials have handling, storage, and transportation requirements that include applying water when handling materials, wetting or covering stored materials, and installing wind barriers to limit VDE. Also, limiting vehicle speeds, loading haul trucks with a freeboard of six inches or greater along with applying water to the top of the load, and covering the cargo compartments are effective measures for reducing VDE and carryout from vehicles transporting bulk materials.

Demolition activities require the application of water to the exterior of the buildings and to unpaved surfaces where materials may fall. A Dust Control Plan will be required for large demolition projects. Consider all structures slated for demolition as possibly being regulated due to potential asbestos, per District Rule 4002 - *National Emission Standards for Hazardous Air Pollutants*. Contact the District well before starting because a 10 working-day notice will likely be required before a demolition can begin.

Dust Control Plans identify the dust sources and describe the dust control measures that will be implemented before, during, and after any dust generating activity for the duration of the project. Owners or operators are required to submit plans to the District at least 30 days prior to commencing the work for the following:

- Residential developments of ten or more acres of disturbed surface area.
- Non-residential developments of five or more acres of disturbed surface area.
- The relocation of more than 2,500 cubic yards per day of materials on at least three days.

Operations may not commence until the District has approved the Dust Control Plan. A copy of the plan must be on site and available to workers and District employees. **All work on the site is subject to the requirements of the approved dust control plan. A failure to abide by the plan by anyone on site may be subject to enforcement action.**

Owners or operators of construction projects that are at least one acre in size and where a Dust Control Plan is not required, must provide written notification to the District at least 48 hours in advance of any earthmoving activity.

Record Keeping is required to document compliance with the rules and must be kept for each day any dust control measure is used. The District has developed record forms for water application, street sweeping, and "permanent" controls such as applying long term dust palliatives, vegetation, ground cover materials, paving, or other durable materials. Records must be kept for one year after the end of dust generating activities (Title V sources must keep records for five years).

Exemptions exist for several activities. Those occurring above 3,000 feet in elevation are exempt from all Regulation VIII requirements. Further, Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities* exempts the following construction and earthmoving activities:

- Blasting activities permitted by California Division of Industrial Safety.
- Maintenance or remodeling of existing buildings provided the addition is less than 50% of the size of the existing building or less than 10,000 square feet (due to asbestos concerns, contact the District at least two weeks ahead of time).
- Additions to single family dwellings.
- The disking of weeds and vegetation for fire prevention on sites smaller than ½ acre.
- Spreading of daily landfill cover to preserve public health and safety and to comply with California Integrated Waste Management Board requirements.

Nuisances are prohibited at all times because District Rule 4102 – *Nuisance* applies to all construction sources of fugitive dust, whether or not they are exempt from Regulation VIII. It is important to monitor dust-generating activities and implement appropriate dust control measures to limit the public's exposure to fugitive dust.

For more information please contact the Compliance Division of the District office nearest to you. Information on Regulation VIII, where you may obtain copies of record keeping forms, the Dust Control Plan template, and the Construction Notification form, is available on the District's website at:

www.valleyair.org, under Compliance Assistance/Dust Control.