

FEATHER RIVER RECREATION AND PARK DISTRICT

OROVILLE, CALIFORNIA



NOTICE INVITING BIDS
GENERAL CONDITIONS
SPECIAL PROVISIONS
PROJECT CONTRACT
BID PROPOSAL

FOR

PROJECT NAME: RIVERBEND PARK RENOVATION PH 2 – AMPHITHEATER

BID OPENING DATE: THURSDAY MARCH 23, 2020 AT 2:30PM

Approved By: _____

Shawn Rohrbacker, General Manager
FRRPD

**FOR INFORMATION PURPOSES ONLY;
THIS IS NOT A PART OF THE CONTRACT DOCUMENT**

WHEN SUBMITTING YOUR BID, PLEASE SUBMIT ONLY:

1. ALL PF (PROPOSAL FORMS) FROM THE SPECIFICATION SET .
2. ALL REQUIRED SUBMITTALS AS DESCRIBED IN THE PF FROM THE SPECIFICATION SET
3. ALL ADDENDA (IF THERE ARE ANY).
4. BIDDER'S BOND.

IT IS NOT NECESSARY TO SUBMIT THE ENTIRE SPECIFICATIONS SET. PLEASE KEEP THE REMAINDER OF THE SET FOR YOUR INFORMATION.

PROPOSAL SHALL BE SUBMITTED IN A SEALED ENVELOPE, PLAINLY MARKED ON THE OUTSIDE WITH THE PROJECT NAME, BID OPENING DATE AND TIME OF BID OPENING.

THANK YOU.

PROFESSIONAL LANDSCAPE ARCHITECT'S CERTIFICATION

This is to certify that this Riverbend Park Renovation Phase 2 – Amphitheater design by Melton Design Group for the Feather River Recreation and Park District of Oroville, California has been prepared under my direction and supervision.



Greg Melton, RLA

California Registration No. 4217

2/21/2020

Date

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I. NOTICE TO CONTRACTORS

**FEATHER RIVER RECREATION AND PARK DISTRICT
OROVILLE, CALIFORNIA**

NOTICE TO CONTRACTORS

PROJECT NAME: RIVERBEND PARK RENOVATION PH 2 AMPHITHEATER

NOTICE INVITING BIDS - The Feather River Recreation and Park District (FRRPD) will receive sealed bids for the above at the FRRPD Activity Center, 1875 Feather River Blvd, Oroville, CA 95965, until **MARCH 23, 2020 at 2:30 PM** which time they will be publicly opened and read.

GENERAL WORK DESCRIPTION - The work, in general, to be done under this contract consists of coordination, installation and construction of a new amphitheater including demolition, grading, drainage, excavation, concrete, steel work, electrical, landscape, irrigation, amenities and signage all within the confines of Riverbend Park in Oroville, CA.

The contractor is to carefully examine the site of the proposed work, and is to make his or her own determination of the scope of the work to be performed, including but not limited to the soil conditions and/or groundwater conditions to be encountered in performing the work, and he or she is to carefully examine these Contract Documents.

Inquiries or questions based on alleged patent ambiguity of the plans, specifications or estimate must be communicated as a bidder inquiry prior to bid opening shall be submitted by email. Any such inquiries or questions, submitted after bid opening, will not be treated as a bid protest.

Technical questions should be directed by email to Project Manager Paige Gimbal paige@meltondg.com.

BIDDERS INFORMATION - Bidders instructions, specifications and/or plans may be secured on March 2, 2020 from Metagraphics at 925 Cedar Street, Chico, Ca 95928; Telephone (530) 343-3004; emailprint@metagraphics.com.

BIDDERS CONFERENCE - An optional bidders' conference has been scheduled for **Thursday, March 12, 2020, at 2:00 PM** at RIVERBEND PARK AMPHITHEATER, 50 Montgomery Street, Oroville, CA 95965, to tour the site, discuss issues pertaining to the project and answer any contractor questions that may arise. Attendance at the bidder's conference is highly recommended to review the existing conditions of the amphitheater area that are to be modified with the construction of the Amphitheater.

BID SUBMITTAL REQUIREMENTS - Bidders may only submit their bids on proposal forms provided by the District. **Bids must be submitted in a sealed envelope plainly marked on its outside with the project title and the bid opening date and time.** Each bid must be accompanied by cash, a certified or cashier's check, or a bid bond in favor of the FEATHER RIVER RECREATION AND PARK DISTRICT (FRRPD) in an amount equal to at least ten percent (10%) of the amount bid, such guaranty to be forfeited should the bidder to whom the contract is awarded fail to enter into the contract.

BID AWARD PROVISIONS: REJECTION - An award of bid, if a bid is awarded, will be made to the lowest responsible base bidder whose bid complies with the District's requirements within fourteen (14) days of the bid opening date. The District has the option of accepting none, or any number and combination of bid alternatives. The District reserves the right, in its sole discretion, to reject any bid which fails to meet bid requirements in any respect, to reject all bids for any reasons whatsoever and to waive minor irregularities in any bid. In addition to its right to accept or reject any and all bids, the District reserves the right in its sole discretion to base the award of bid on the inclusion of any, all, or none of the additive alternate bid items included in the bid proposal.

INSURANCE; BONDS; REQUIRED - The bidder to whom a contract is awarded will be required to furnish to the District evidence of insurance coverage(s) and performance/labor and materials/payment bonds in full compliance with the provisions of the contract documents.

APPRENTICESHIP STANDARDS - In accordance with the provisions of Part 7, Chapter 1, Article 2, Section 1777.5 of the Labor Code of the State of California, the prime contractor shall be responsible for fully complying with the provisions of this Section, as well as any regulations adopted by the Director of Industrial Relations, for all apprenticeable crafts of trades, and shall also assure compliance by his/her subcontractors with respect to such apprenticeable crafts or trades.

LICENSING REQUIREMENTS - The contractor shall possess either a Class A or B at the time this contract is awarded.

PAYMENT RETENTIONS; SUBSTITUTION OF SECURITIES - Ten percent (10%) will be withheld from each progress payment made to the contractor for work performed and will be held until completion of the work, its acceptance and the expiration of the period provided by law for filing liens by laborers or suppliers. In accordance with the provisions of Section 23300 of the Public Contract code of the State of California, securities may be substituted for the moneys which the District withholds.

PUBLISH DATE: March 2, 2020

II. GENERAL CONDITIONS

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ARTICLE 1

GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1 APPLICABLE CODE REQUIREMENTS. The term “Applicable Code Requirements” means all laws; statutes; the most recent applicable building standard codes, as modified by State Regulations (Title 24); ordinances; rules; regulations; and lawful orders of all public authorities having jurisdiction over the Feather River Recreation and Park District, Contractor, any Subcontractor, the Project, the Project site, the Work, or the prosecution of the Work.

1.1.2 CONTRACT AGREEMENT. The term “Contract Agreement” means the written agreement executed between the District and the Contractor which requires the Contractor to do all the work and furnish all the labor and materials necessary for the Project, which sets forth the consideration to be paid by District to the Contractor for such work, and which incorporates by reference these general provisions.

1.1.3 CONTRACT DOCUMENTS. The “Contract Documents” consist of all documents listed in Article 6 of the Contract Agreement.

1.1.4 CONTRACT MODIFICATION. The “Contract Modification” means (1) an amendment to the Contract Documents, (2) a change order, (3) a field order, or (4) a letter of instruction.

1.1.5 CONTRACT SUM. The term “Contract Sum” means the entire sum to be paid by District to Contractor for all work to be performed on the Project as set forth in the Contract Agreement.

1.1.6 CONTRACT TIME. The term “Contract Time” means the number of days set forth in the Contract Agreement within which full completion of the Work must be achieved. The Contract Time may be adjusted only by change order.

1.1.7 DAY. The term “Day,” as used in the bidding requirements and the Contract Documents, shall mean calendar day, unless otherwise specifically provided.

1.1.8 DRAWINGS. The term “Drawings” means the graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams. The Drawings are listed in the list of drawings.

1.1.9 FINAL COMPLETION. The term “Final Completion” means the Work has been fully completed in accordance with the Contract Documents as determined by District’s Representative pursuant to Section 9.7, Final Completion and Final Payment, of the General Conditions.

1.1.10 OWNER. The term “Owner” means the Feather River Recreation and Park District (FRRPD).

1.1.11 DISTRICT. The term “District” means the Feather River Recreation and Park District (FRRPD).

1.1.12 CITY. The term “City” means the City of Oroville.

1.1.13 COUNTY. The term “County” means the County of Butte.

1.1.14 DISTRICT’S REPRESENTATIVE. The term “District’s Representative” means the District’s Project Inspector or designee identified as such in the Contract Documents.

1.1.15 PRODUCT DATA. “Product Data” are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by Contractor to illustrate or describe materials or equipment for some portion of the Work.

1.1.16 PROJECT. The term “Project” means the total construction of the Work performed under the Contract Documents which may be the whole or a part and which may include construction by City, District or by separate contractors.

1.1.17 SAMPLES. “Samples” are physical examples which illustrate materials, equipment, or workmanship and establish standards by which the Work will be judged.

1.1.18 SHOP DRAWINGS. “Shop Drawings” are drawings, diagrams, schedules, and other data specially prepared for the Work by Contractor or a Subcontractor to illustrate some portion of the Work.

1.1.19 SPECIFICATIONS. The term “Specifications” means that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards and workmanship for the Work, and performance of related services.

1.1.20 SUBCONTRACTOR. The term “Subcontractor” means any person or legal entity who contracts with Contractor to provide labor, materials, equipment and/or services required for construction of the Project.

1.1.21 WORK. The term “Work” means the construction and services required by the Contract Documents and includes all labor, materials, equipment, tools, and services provided or to be provided by Contractor to fulfill Contractor’s obligations.

1.1.22 ENGINEER. The term “Engineer or District Engineer” means the Landscape Architect.

1.2 INTERPRETATION

1.2.1 The Contract Documents are complementary and what is required by one shall be as binding as if required by all. In the case of conflict or inconsistency, the Supplementary Conditions shall control over the General Conditions and the Specifications shall control over the Drawings. Figured dimensions shall control over scaled measurements.

1.2.2 The Contract Documents may omit modifying words such as “all” and “any,” and articles such as “the” and “an,” but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement. The use of the word “including,” when following any general statement, shall not be construed to limit such statement to specific items or matters set forth immediately following such word or to similar items or matters, whether or not nonlimiting language (such as “without limitation,” “but not limited to,” or words of similar import) is used with reference thereto, but rather shall be deemed to refer to all other items or matters that could reasonably fall within the broadest possible scope of such general statement.

1.2.3 Whenever the context so requires, the use of the singular number shall be deemed to include the plural and vice versa. Each gender shall be deemed to include any other gender, and each shall include corporation, partnership, trust, or other legal entity whenever the context so requires. The captions and headings of the various subdivisions of the Contract Documents are intended only as a matter of reference and convenience and in no way define, limit, or prescribe the scope or intent of the Contract Documents or any subdivision thereof.

ARTICLE 2

DISTRICT

2.1 INFORMATION AND SERVICES PROVIDED BY DISTRICT

2.1.1 If required for performance of the Work, as determined by District's Representative, District will make available a survey describing those physical characteristics, boundaries, easements, and utility locations for the Project site of which District has actual knowledge.

2.1.2 Contractor will be furnished, free of charge, such copies of the Contract Documents as District deems reasonably necessary for execution of the Work.

2.2 DISTRICT TO PROVIDE ACCESS TO PROJECT SITE

2.2.1 District will provide, no later than the date designated in the current contract schedule accepted by District's Representative, the lands and facilities upon which the Work is to be performed, including such access to other lands and facilities designated in the Contract Documents for use by Contractor.

2.3 DISTRICT'S RIGHT TO STOP THE WORK

2.3.1 If Contractor fails to correct defective work as required by Section 12.2 or fails to perform the Work in accordance with the Contract Documents, District or District's Representative may direct Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated by Contractor. Contractor shall not be entitled to any adjustment of Contract Time or Contract Sum as a result of any such order. District and District's Representative shall have no duty or responsibility to Contractor or any other party to exercise the right to stop the Work.

2.4 DISTRICT'S RIGHT TO CARRY OUT THE WORK

2.4.1 If Contractor fails to carry out the Work in accordance with the Contract Documents, fails to provide sufficient labor, materials, equipment, tools, and services to maintain the contract schedule, or otherwise fails to comply with any material term of the Contract Documents, and fails within four (4) days after receipt of notice from District to promptly commence and thereafter diligently continue to completion the correction of such failure, District may, without prejudice to other remedies District may have, correct such failure at Contractor's expense. In such case, District shall be entitled to deduct from payments then or thereafter due Contractor the cost of correcting such failure, including compensation for the additional services and expenses of District's Representative and District's consultants made necessary thereby. If payments then or thereafter due Contractor are not sufficient to cover such amounts, Contractor shall pay the additional amount to District.

2.5 DISTRICT'S RIGHT TO REPLACE DISTRICT'S REPRESENTATIVE

2.5.1 District may at any time and from time to time, without prior notice to or approval of Contractor, replace District's Representative with a new District's Representative. Upon receipt of notice from District informing Contractor of such replacement and identifying the new District's Representative, Contractor shall recognize such person or firm as District's Representative for all purposes under the Contract Documents.

ARTICLE 3

CONTRACTOR

3.1 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.1.1 Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by District and shall promptly report in writing to District's Representative any errors, inconsistencies, or omissions in the Contract Documents or inconsistencies with Applicable Code Requirements observed by Contractor.

3.1.2 Contractor shall take field measurements, verify field conditions, and carefully compare with the Contract Documents such field measurements, conditions, and other information known to Contractor before commencing the Work. Errors, inconsistencies, or omissions discovered at any time shall be promptly reported in writing to District's Representative.

3.1.3 If Contractor performs any construction activity which it knows or should know involves an error, inconsistency, or omission referred to in Paragraphs 3.1.1 and 3.1.2, without notifying and obtaining the written consent of District's Representative, Contractor shall be responsible for the resultant losses, including, without limitation, the costs of correcting defective work.

3.2 SUPERVISION AND CONSTRUCTION PROCEDURES

3.2.1 Contractor shall supervise, coordinate, and direct the Work using Contractor's best skill and attention. Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, procedures, and the coordination of all portions of the Work, unless otherwise shown or specified in the Contract Documents or directed in writing by District's Representative.

3.2.2 Contractor shall be responsible to District for acts and omissions of Contractor's agents, employees, and Subcontractors, and their respective agents and employees.

3.2.3 Contractor shall not be relieved of its obligation to perform the Work in accordance with the Contract Documents either by acts or omissions of District or District's Representative in the administration of the Contract Documents, or by tests, inspections, or approvals required or performed by persons or firms other than Contractor.

3.2.4 Contractor shall be responsible for inspection of all portions of the Work, including those portions already performed under the Contract Documents, to determine that such portions conform to the requirements of the Contract Documents and are ready to receive subsequent Work.

3.2.5 Contractor shall at all times maintain good discipline and order among its employees and Subcontractors. Contractor shall provide competent, fully qualified personnel to perform the Work.

3.2.6 Contractor shall furnish District's Representative at the beginning of each week with a copy of each of Contractor's daily Project reports prepared by Contractor's superintendent (or other Project manager) for the prior week.

3.3 LABOR AND MATERIALS

3.3.1 Unless otherwise provided in the Contract Documents, Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

3.4 CONTRACTOR'S WARRANTY

3.4.1 Contractor warrants to District that all materials and equipment used in or incorporated into the Work will be of good quality, new, and free of liens, Claims, and security interests of third parties; that the Work will be of good quality and free from defects; and that the Work will conform with the requirements of the Contract Documents. If required by District's Representative, Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

3.5 TAXES

3.5.1 Contractor shall pay all sales, consumer, use, and similar taxes for the Work or portions thereof provided by Contractor, which are enacted when bids for the Work are received, whether or not yet effective or merely scheduled to go into effect.

3.6 PERMITS, FEES, AND NOTICES

3.6.1 Contractor shall secure and pay for all permits, approvals, government fees, licenses, and inspections necessary for the proper execution and performance of the Work. Contractor shall deliver to District all original licenses, permits, and approvals obtained by Contractor in connection with the Work prior to the final payment or upon termination of the Contract Agreement, whichever is earlier.

3.7 APPLICABLE CODE REQUIREMENTS

3.7.1 Contractor shall perform the Work in accordance with the following Applicable Code Requirements:

- .1 All laws, statutes, the most recent applicable building standard codes, ordinances, rules, regulations, and lawful orders of all public authorities having jurisdiction over District, Contractor, any Subcontractor, the Project, the Project site, the Work, or the prosecution of the Work.
- .2 The Federal Occupational Safety and Health Act and all other Applicable Code Requirements relating to safety.
- .3 Applicable titles in the State of California Code of Regulations.
- .4 Applicable sections in the State of California Labor Code.
- .5 All Applicable Code Requirements relating to nondiscrimination, payment of prevailing wages (if required by the Supplementary Conditions), payroll records, apprentices, and Work day. (In accordance with California law, District retains the right to opt out of prevailing wage requirements where the Project is not being funded with a state grant or subvention or is not otherwise considered to be a matter of state concern.)

Without limiting the foregoing, Contractor shall comply with the provisions regarding nondiscrimination, payment of prevailing wages (if required by the Supplementary Conditions), payroll records, apprentices, and Work day set forth in Article 14.

3.7.2 Contractor shall comply with and give notices required by all Applicable Code Requirements, including all environmental laws and all notice requirements under the State of California Safe Drinking Water and Enforcement Act of 1986 (State of California Health and Safety Code Section 25249.5 and applicable sections that follow). Contractor shall promptly notify District's Representative in writing if Contractor becomes aware during the performance of the Work that the Contract Documents are at variance with Applicable Code Requirements. If changes in the Work are necessary to correct such variance, Contract Sum and Contract Time will be subject to change by change order.

3.7.3 If Contractor performs Work which it knows or should know is contrary to Applicable Code Requirements, without prior notice to District and District's Representative, Contractor shall be responsible for such Work and shall bear the resultant losses, including, without limitation, the costs of correcting defective work.

3.8 SUPERINTENDENT

3.8.1 Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site at all times during the performance of the Work. The superintendent and any replacement superintendent shall be subject to the approval of District. Upon notice from District's Representative requesting replacement of a superintendent who is unsatisfactory to District, Contractor shall promptly replace such superintendent with a competent superintendent satisfactory to District. The superintendent shall have authority to act on behalf of the contractor and all communications given to and received from superintendent shall be binding on Contractor.

3.9 SCHEDULES REQUIRED OF CONTRACTOR

3.9.1 Contractor shall submit a preliminary contract schedule to District's Representative in the form and within the time limit required by the Specifications. District's Representative will review the preliminary contract schedule with Contractor within the time limit required by the Specifications.

3.9.2 Contractor shall submit a contract schedule to District's Representative in the form and within the time limits required by the Specifications, which must be acceptable to District's Representative. Contractor shall submit updated contract schedules, which must be acceptable to District's Representative, within five (5) days following the end of each calendar month during which Work is in progress or at such other frequency as many be provided by the plans and Specifications. Failure to provide the required acceptable schedules may result in District's withholding of partial payments.

3.9.3 The preliminary contract schedule, the contract schedule, and updated contract schedules shall represent a practical plan to complete the Work within the Contract Time. Extension of any schedule beyond the Contract Time shall not be acceptable. Schedules showing the Work completed in less than the Contract Time may be acceptable if

judged by District's Representative to be practical. However, acceptance of such a schedule by District's Representative shall not change the Contract Time. The Contract Time, not the contract schedule, shall control the determination of whether liquidated damages should be assessed against the Contractor because of any delay in completion of the Project.

If a schedule showing the Work completed in less than the Contract Time is accepted, Contractor shall not be entitled to extensions of the Contract Time for Excusable Delays or Compensable Delays or to adjustments of the Contract Sum for Compensable Delays until such delays extend the completion of the Work beyond the expiration of the Contract Time.

3.9.4 Contractor shall prepare and keep current, to the satisfaction of District's Representative, a schedule of submittals, as required by the Specifications, and that is coordinated with the contract schedule.

3.9.5 District's Representative's review of the form and general content of the preliminary contract schedule, contract schedule, and updated contract schedules is for the purpose of determining, in its judgment, whether the following requirements are satisfied:

- .1 Schedules must be suitable for monitoring progress of the Work.
- .2 Schedules must provide necessary data about the timing for District decisions and District-furnished items.
- .3 Schedules must be in sufficient detail to demonstrate adequate planning for the Work.
- .4 Schedules must represent a practical plan to complete the Work within the Contract Time.

Contractor shall plan, develop, supervise, control, and coordinate the performance of the Work so that its progress and the sequence and timing of Work activities conform to the current accepted contract schedule. Contractor shall continuously obtain from Subcontractors information and data about the planning for and progress of the Work and the delivery of equipment, shall coordinate and integrate such information and data into updated contract schedules, and shall monitor the progress of the Work and the delivery of equipment. Contractor shall act as the expeditor of potential and actual delays, interruptions, hindrances, or disruptions for its own forces and those forces of Subcontractors, regardless of tier. Contractor shall cooperate with District's Representative in the development of the contract schedule and updated contract schedules.

District's Representative's acceptance of or its review comments about any schedule or scheduling data shall not relieve Contractor from its sole responsibility to plan for, perform, and complete the Work within the Contract Time. Acceptance of or review comments about any schedule shall not transfer responsibility for any schedule to District's Representative or District nor imply their agreement with (1) any assumption upon which such schedule is based or (2) any matter underlying or contained in such schedule.

Failure of District's Representative to discover errors or omissions in schedules that it has reviewed, or to inform Contractor that Contractor, Subcontractors, or others are behind schedule, or to direct or enforce procedures for complying with the contract schedule shall not relieve Contractor from its sole responsibility to perform and complete the Work within the Contract Time and shall not be a cause for an adjustment of the Contract Time or the Contract Sum.

3.9.6 Contractor shall perform the Work in accordance with the current accepted contract schedule.

3.10 DOCUMENTS AND SAMPLES AT PROJECT SITE

3.10.1 Contractor shall maintain the following at the Project site:

- .1 One record copy of the Contract Documents, in good order and marked to record current changes and selections made during construction.
- .2 The current accepted contract schedule.
- .3 Shop Drawings, Product Data, and Samples.

- .4 All other required submittals.
- .5 A copy of each subcontract requiring Work to be done for the Project.

These shall be available to District's Representative and shall be delivered to District's Representative for submittal to District upon the earlier of Final Completion or termination of the Contract Agreement.

3.11 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

3.11.1 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate, for those portions of the Work for which submittals are required, how Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents.

3.11.2 Contractor shall review, approve, and submit to District's Representative Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of District or of separate contractors. Submittals made by Contractor which are not required by the Contract Documents may be returned without action by District's Representative.

3.11.3 Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings, Product Data, Samples, or similar submittals until the respective submittal has been reviewed by District's Representative and no exceptions have been taken by District's Representative. Such Work shall be in accordance with approved submittals and the Contract Documents.

3.11.4 By approving and submitting Shop Drawings, Product Data, Samples, and similar submittals, Contractor represents that it has determined or verified materials and field measurements and conditions related thereto, and that it has checked and coordinated the information contained within such submittals with the requirements of the Contract Documents and Shop Drawings for related Work.

3.11.5 If Contractor discovers any conflicts, omissions, or errors in Shop Drawings or other submittals, Contractor shall notify District's Representative and receive instruction before proceeding with the affected Work.

3.11.6 Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by District's Representative's review of Shop Drawings, Product Data, Samples, or similar submittals, unless Contractor has specifically informed District's Representative in writing of such deviation at the time of submittal and District's Representative has given written approval of the specific deviation. Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals by District's Representative's review, acceptance, comment, or approval thereof.

3.11.7 Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by District's Representative on previous submittals.

3.12 USE OF SITE AND CLEAN UP

3.12.1 Contractor shall confine operations at the Project site to areas permitted by law, ordinances, permits, and the Contract Documents. Contractor shall not unreasonably encumber the Project site with materials or equipment.

3.12.2 Contractor shall, during performance of the Work, keep the Project site and surrounding area free from the accumulation of excess dirt, waste materials, and rubbish caused by Contractor. Contractor shall remove all excess dirt, waste material, and rubbish caused by the Contractor; tools; equipment; machinery; and surplus materials from the Project site and surrounding area at the completion of the Work.

3.12.3 Personnel of Contractor and Subcontractors shall not occupy, live upon, or otherwise make use of the Project site during any time that Work is not being performed at the Project site, except as otherwise provided in the Contract Documents.

3.13 CUTTING AND PATCHING

3.13.1 Contractor shall do all cutting, fitting, or patching of the Work required to make all parts of the Work come together properly and to allow the Work to receive or be received by Work of separate contractors shown upon, or reasonably implied by, the Contract Documents.

3.13.2 Contractor shall not endanger the Work, the Project, or adjacent property by cutting, digging, or otherwise. Contractor shall not cut or alter the Work of any separate contractor without the prior consent of District's Representative.

3.14 ACCESS TO WORK

3.14.1 District, District's Representative, their consultants, and other persons authorized by District shall at all times have access to the Work wherever it is in preparation or progress. Contractor shall provide safe and proper facilities for such access and for inspection.

3.15 ROYALTIES AND PATENTS

3.15.1 Contractor shall pay all royalties and license fees required for the performance of the Work. Contractor shall defend suits or Claims resulting from Contractor's or any Subcontractor's infringement of patent rights and shall indemnify District and District's Representative from losses on account thereof.

3.16 CONCEALED OR UNKNOWN CONDITIONS

3.16.1 Contractor shall mark with subcontractors to flag existing utilities that are to remain; potable water, sanitary sewer, electric and irrigation. Coordinate work between subcontractors to avoid damage to existing utilities.

3.16.2 If conditions are encountered by Contractor or any Subcontractor at the Project site which are:

- .1 subsurface,
- .2 otherwise concealed and unusual, or
- .3 unknown and unusual physical conditions, which differ materially from those:
 - .1 indicated in or reasonably inferable from the Contract Documents, or
 - .2 discoverable by a reasonable pre-bid Project site inspection, then Contractor shall give notice to District's Representative promptly before such conditions are disturbed and no later than three (3) days after the first observance of such conditions. District's Representative will promptly, using reasonable efforts to minimize delay to the progress of the Work, investigate and determine if such conditions meet the criteria specified above. If such criteria are met, District's Representative will determine what action shall be taken and to what extent, if any, adjustments should be made to the Contract Sum and the Contract Time. District's Representative will state the reasons for such determination in writing.

3.17 REPAIR OF DAMAGED WORK

3.17.1 Contractor shall promptly repair and replace any Work or materials damaged or destroyed prior to Final Completion. If such damage to or loss of the Work does not arise, in whole or in part, from the acts or omissions of Contractor, any Subcontractor, anyone directly or indirectly employed by either of them, or anyone for whose acts either of them may be liable, the following may occur:

- .1 The Contract Time will be subject to adjustment by change order.
- .2 The Contract Sum will be subject to adjustment by change order, if and to the extent that the actual costs of such repair and replacement exceed the greater of the following:
 - .1 The proceeds of insurance received by Contractor for such loss.

- .2 The amount of insurance proceeds which would have been obtained under the insurance policies required to be maintained by Contractor under the Contract Documents.
- .3 The amount of insurance proceeds which would have been obtained under the insurance policies required to be maintained by Contractor under the Contract Documents, but for the insurers' inability or refusal to honor such policies.

3.18 DUTY TO DEFEND

3.18.1 To the fullest extent permitted by law, the Contractor shall defend District from and against all suits filed against District alleging Claims (including costs of attorneys' fees) by reason of liability imposed by law and all Claims, including but not limited to, Claims of personal injury, death, damage to property and loss of use thereof, or any Claims arising out of Contractor's performance of the Contract Agreement, or damages or other relief based on allegations of the failure of the Contractor or its Subcontractors to properly perform its obligations under the Contract Agreement, or the Contractor's violations of any legal duties, even if the allegations of any such suit are groundless, false or fraudulent, and the Contractor may make such investigation and settlement of any such suit as it deems expedient. This duty to defend is separate and independent from the Contractor's duty to indemnify and hold harmless District from such Claims. Any failure to fulfill this obligation shall be a default of the Contractor's performance obligations under the Contract Agreement.

3.19 DUTY TO INDEMNIFY

3.19.1 To the fullest extent permitted by the law, the Contractor shall hold harmless and indemnify District from and against all Claims, losses and expenses (including costs of attorneys' fees) by reason of liability imposed by law for any and all Claims, including but not limited to, Claims of personal injury, death, damage to property and loss of use thereof, or any Claims arising out of Contractor's performance of the Contract Agreement, or damages or other relief based on allegations of the failure of the Contractor or its Subcontractors to properly perform its obligations under the Contract Agreement, or the Contractor's violations of any legal duties. Any failure to fulfill this obligation shall be a default of the Contractor's performance obligations under the Contract Agreement.

ARTICLE 4

ADMINISTRATION OF THE CONTRACT

4.1 ADMINISTRATION OF THE CONTRACT BY DISTRICT'S REPRESENTATIVE

4.1.1 District's Representative will provide administration of the Contract Documents in the manner provided therein and will be the representative of District as follows:

- .1 During construction.
- .2 Until final payment is due.
- .3 At District's request from time to time during the guarantee to repair period described in Section 12.2.

District's Representative will have authority to act on behalf of District only to the extent provided in the Contract Documents. The approval by any architect or designer providing design services for District of any modification to the Drawings or Specifications and/or any time extension is not effective unless and until incorporated into a change order approved by District's Representative.

4.1.2 District's Representative will visit the Project site at intervals appropriate to the stages of construction to become familiar with the progress and quality of the completed Work and to determine if the Work is being performed in accordance with the Contract Documents. However, no actions taken during such Project site visit by District's Representative shall relieve Contractor of its obligations as described in the Contract Documents.

4.1.3 District's Representative will not have control over, will not be in charge of, and will not be responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work, since these are solely Contractor's responsibility, unless otherwise required by the Contract Documents.

4.1.4 Except as otherwise provided in the Contract Documents or when direct communications have been specifically authorized, District and Contractor shall communicate through District's Representative. Communications by Contractor with District's consultants shall be through District's Representative. Communications by District and District's Representative with Subcontractors shall be through Contractor. Communications by Contractor and Subcontractors with separate contractors shall be through District's Representative. Contractor shall not rely on oral or other non-written communications.

4.1.5 Based on District's Representative's Project site visits and evaluations of Contractor's partial payment requests, District's Representative will review and certify the amounts, if any, due Contractor and will issue certificates for payment in such amounts.

4.1.6 District's Representative will have the authority to reject the Work, or any portion thereof, which does not conform to the Contract Documents. District's Representative shall have the authority to stop the Work or any portion thereof. Whenever District's Representative considers it necessary or advisable for implementation of the intent of the Contract Documents, District's Representative will have the authority to require additional inspection or testing of the Work in accordance with the Contract Documents, whether or not such Work is fabricated, installed, or completed. However, no authority of District's Representative conferred by the Contract Documents, nor any decision made in good faith either to exercise or not exercise such authority, shall give rise to a duty or responsibility of District's Representative to Contractor, Subcontractors, directors, officers, agents, or employees of Contractor or Subcontractors, any other person or firm performing portions of the Work, or third parties.

4.1.7 District's Representative will prepare change orders, field orders, and letters of instruction.

4.1.8 District's Representative will conduct inspections in connection with Beneficial Occupancy, as described in Section 9.6, and to determine the dates of substantial completion and Final Completion; will receive and forward to District, for District's review, any records, written warranties, and related documents required by the Contract Documents and assembled by Contractor; and will issue a final certificate for payment upon Contractor's compliance with the requirements of the Contract Documents.

4.1.9 District's Representative shall be, in the first instance, the interpreter of the requirements of the Contract Documents and the judge of performance thereunder by Contractor. Should Contractor discover any conflicts, omissions, or errors in the Contract Documents; have any questions about the interpretation or clarification of the Contract Documents; question whether Work is within the scope of the Contract Documents; or question that Work required is not sufficiently detailed or explained, then, before proceeding with the Work affected, Contractor shall notify District's Representative in writing and request interpretation, clarification, or furnishing of additional detailed instructions. District's Representative's response to questions and requests for interpretations, clarifications, instructions, or decisions will be made with reasonable promptness. Should Contractor proceed with the Work affected before receipt of a response from District's Representative, any portion of the Work which is not done in accordance with District's Representative's interpretations, clarifications, instructions, or decisions shall be removed or replaced and Contractor shall be responsible for all resultant losses.

4.2 CLAIMS

4.2.1 The term "Claim" means a written demand or assertion by Contractor seeking, as a matter of right, adjustment or interpretation of the terms of the Contract Documents, payment of money, extension of time, or other relief with respect to the Contract Documents, or determination of other disputes or matters in question between District and Contractor arising out of or related to the Contract Documents or the performance of the Work, including Claims alleging an error or omission by District's Representative. However, the term "Claim" shall not include, and the claims procedures provided under this Article 4 shall not apply to the following:

- .1 Claims respecting penalties for forfeitures prescribed by statute or regulation which a government agency is specifically authorized to administer, settle, or determine.

- .2 Claims respecting personal injury, death, reimbursement, or other compensation arising out of or resulting from liability for personal injury or death.
- .3 Claims respecting a latent defect, breach of warranty, or guarantee to repair.
- .4 Claims respecting stop notices.

4.2.2 A Claim must be stated with specificity, including identification of the event giving rise to the Claim, the date of the event, and the asserted effect on the Contract Sum and the Contract Time. The Claim shall include adequate supporting data. Adequate supporting data for a Claim for an adjustment of the Contract Time shall include scheduling data demonstrating the impact of the event on completion of the Work. Adequate supporting data for a Claim for an adjustment of the Contract Sum shall include a detailed cost breakdown of items allowed under Section 7.2. If the exact amount of a Claim is not ascertainable at the time such Claim is made, such supporting data as are then available shall be submitted. Supplemental data supporting the exact amount of the Claim shall be submitted as soon as available.

4.2.3 Submission of a Claim, and all supporting data, correspondence, and documentation relating thereto, shall be made in accordance with Section 15.8.

4.2.4 Contractor shall provide written notice to District's Representative of a potential Claim for additional time or compensation as soon as possible and before proceeding to execute the Work or portions of the Work giving rise to any such Claim. The written notice of potential Claim shall set forth the reasons the Contractor believes additional compensation or time may be due, the nature of the costs involved, and, insofar as possible, the amount of the potential Claim. Thereafter, Contractor shall submit a more detailed Claim in the manner required by Section 4.3. Contractor hereby expressly waives any Claims of which Contractor was aware, whether or not the exact amounts of such Claims were ascertainable, that are not submitted to District's Representative prior to Contractor proceeding to execute the Work or portions of the Work giving rise to such Claims.

4.3 ASSERTION OF CLAIMS

4.3.1 SUBMISSION TO DISTRICT'S REPRESENTATIVE. All Claims shall be first submitted to District's Representative within the time limits provided in Paragraphs 4.2.4 and 4.3.3. Such submission to District's Representative shall be a condition precedent to submission of such Claim to mediation or arbitration.

4.3.2 CONTINUING CONTRACT PERFORMANCE. Notwithstanding the making of any Claim or the existence of any dispute regarding any Claim, unless otherwise directed by District's Representative, Contractor shall not cause any delay, cessation, or termination in or of Contractor's performance of the Work, but shall diligently proceed with performance of the Work in accordance with the Contract Documents. District will continue to make payments in accordance with the Contract Documents.

4.3.3 TIME LIMIT ON CLAIMS. Contractor shall submit documentation in support of a Claim, together with adequate supporting data, to District's Representative as soon as possible but not later than twenty-one (21) days after the occurrence of the event giving rise to the Claim or the date Contractor first recognized, or reasonably should have recognized, the condition giving rise to the Claim, whichever is later. Contractor hereby expressly waives all Claims not made within the aforesaid time limits.

4.4 DECISION ON CLAIMS

4.4.1 District's Representative shall promptly review Claims. If District's Representative reasonably determines that additional supporting data are necessary, District's Representative shall request such additional data within ten (10) days after receipt of the Claim. Such data shall be furnished no later than ten (10) days after such request. District's Representative shall render a decision promptly, but, in any event, within forty-five (45) days after the later of the receipt of the Claim or the receipt of such additional supporting data; provided that, if the amount of the Claim is in excess of \$50,000, the aforesaid forty-five (45) day period shall be sixty (60) days. Failure of District's Representative to render a decision within the aforesaid forty-five (45) or sixty (60) day period shall be deemed a decision denying the Claim and the last day of such period shall be the date of such decision. The decision of District's Representative shall be final and binding, subject, however, to arbitration as provided in Paragraph 4.4.2.

4.4.2 If either Contractor or District disputes District's Representative's decision on a Claim, such party (the "Disputing Party") may initiate arbitration not later than one hundred eighty (180) days after the date of service in person or by mail on the Disputing Party of the final written decision of District's Representative or, if no written decision has been issued, within two hundred forty (240) days after acceptance of the Work.

4.4.3 If a demand for arbitration is not filed by either party within one hundred eighty (180) days after the written decision of District's Representative, that decision shall be final and binding, both parties shall have waived the right to arbitrate, and there shall not be any right to arbitrate or litigate such waiver or any other dispute arising out of the Contract Documents.

4.5 ARBITRATION

4.5.1 All Claims, disputes and other matters in question between the parties arising out of or relating to the Contract Documents shall be decided by arbitration in accordance with the provisions of Public Contract Code Sections 10240-10240.13 and 22201 and the rules of the Office of Administrative Hearings. The Contractor's surety may be made a party to the arbitration proceeding and the arbitration decision shall be binding upon the Contractor's surety. The arbitration decision shall be decided under and in accordance with the laws of the State of California, supported by substantial evidence and, in writing, contain the basis for the decision, findings of fact, and conclusions of law.

4.5.2 An Arbitration is commenced by filing with the Office of Administrative Hearings in Sacramento a verified Complaint in Arbitration within one hundred eighty (180) days from receipt of the decision, or, if no written decision has been issued, within two hundred forty (240) days after acceptance of the Work. The Petitioner shall serve copies of the complaint on the Respondent and any other named party.

4.5.3 Unless otherwise agreed in writing, the Contractor shall carry on the Work and maintain its progress during any arbitration proceeding.

4.5.4 Contractor shall include appropriate language requiring arbitration of all disputes as required by this Article 4 in all subcontracts and agreements of all kinds to which it is a party and which relate to any aspect of the Work so that all Subcontractors and material suppliers are subject to and bound by arbitration as set forth in this Article.

4.5.5 The provisions for arbitration and mediation provided in these General Conditions are in lieu of those contained in Article 1.5, Section 20104, of the Public Contract Code, which provisions are not binding upon District, which is a charter district governed by the California Constitution, Article XI, Section 5.

4.6 MEDIATION

4.6.1 If the parties to a dispute agree in writing, any Claim appealed from the decision of District's Representative may be submitted to mediation in accordance with the Construction Industry Mediation Rules of the American Arbitration Association ("AAA") then in effect.

ARTICLE 5

SUBCONTRACTORS

5.1 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

5.1.1 Unless otherwise stated in the Contract Documents, Contractor shall submit in writing, prior to entering into subcontract agreements, the names and addresses of all Subcontractors proposed for the Work that were not previously listed in Contractor's bid. Any Subcontractor may be disqualified if District or District's Representative determines that such Subcontractor fails to meet the requirements of the Contract Documents or for any other reason.

5.1.2 In accordance with the Subletting and Subcontracting Fair Practices Act, nothing herein shall be deemed to entitle Contractor, without the approval of District, to substitute other Subcontractors for those named in

Contractor's list of Subcontractors and list of changes in Subcontractors due to alternates contained in the completed bid form; and, except with such approval, no such substitution shall be made.

5.1.3 Except as hereinafter provided, any increase in the cost of the Work resulting from the replacement or substitution of a Subcontractor, as required by District or District's Representative pursuant to Paragraph 5.1.1, shall be borne solely by Contractor and Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time on account of such replacement or substitution. However, if a replacement or substitution of any Subcontractor is made as a result of the request of District or District's Representative for any reason other than failure of such Subcontractor to meet the requirements of the Contract Documents, the Contract Sum shall be subject to adjustment of an amount equal to the increase or decrease in the original subcontract amount. In such cases and at the request of District, the replacement Subcontractor shall be selected through a competitive bidding process acceptable to District.

5.2 SUBCONTRACTUAL RELATIONS

5.2.1 All subcontracts shall be in writing and shall require the Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to Contractor by the terms of the Contract Documents, to assume toward Contractor all the obligations and responsibilities which Contractor assumes towards District by the Contract Documents, and to perform such portion of the Work in accordance with the Contract Documents. Each such subcontract shall preserve and protect the rights of District under the Contract Documents, with respect to the Work to be performed by Subcontractor, so that subcontracting thereof will not prejudice such rights. Contractor shall cause each such subcontract to expressly include the following requirements:

- .1 Subcontractor waives all rights that Subcontractor may have against District for damages caused by fire or other perils covered by builder's risk property insurance carried by Contractor or District, except for such rights Subcontractor may have to the proceeds of such insurance held by District under Article 11.
- .2 District and entities and agencies designated by District shall have access to and the right to audit and copy at District's cost all of Subcontractor's books, records, contracts, correspondence, instructions, drawings, receipts, vouchers, purchase orders, and memoranda relating to the Work. Subcontractor shall preserve all such records and other items for a period of at least three (3) years after Final Completion.
- .3 Subcontractor recognizes the rights of District under Section 5.3, Contingent Assignment of Subcontracts, and agrees, upon notice from District that District has elected to accept said assignment and to retain Subcontractor pursuant to the terms of the subcontract, to complete the unperformed obligations under the subcontract and, if requested by District, to execute a written agreement confirming that Subcontractor is bound to District under the terms of the subcontract.

5.2.2 Nothing contained in the Contract Documents shall create any contractual relationship between any Subcontractor and District, except when, and only to the extent that, District elects to accept the assignment of the subcontract with such Subcontractor pursuant to Section 5.3, Contingent Assignment of Subcontracts.

5.2.3 No Subcontractors shall commence to Work at the Project unless and until their subcontract is available for inspection at the Contractor's office at the Project site. Upon request of District's Representative, any or all subcontracts shall be produced for inspection. Any failure to produce a requested subcontract for inspection by District's Representative will be cause for District to withhold partial payments.

5.3 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

5.3.1 Contractor hereby assigns to District all its interest in subcontracts now or hereafter entered into by Contractor for performance of any part of the Work. The assignment will be effective upon acceptance by District in writing and only as to those subcontracts which District designates in writing. District may accept said assignment at any time during the course of the Work and prior to Final Completion in the event of a suspension or termination of Contractor's rights under the Contract Documents. Such assignment is part of the consideration to District for entering into the Contract Agreement with Contractor and may not be withdrawn prior to Final Completion.

ARTICLE 6

SITE INVESTIGATION AND CONDITIONS

6.1 SITE INFORMATION PROVIDED BY DISTRICT

6.1.1 The District has made available to the Contractor, prior to the receipt of bids, all information of which District is aware as to surface and subsurface conditions in the vicinity of the Project site, including any topographical maps, reports of investigation of soil or subsurface conditions and logs of test borings, written opinions of technical advisers, and other information. All such information was obtained by District to assist the Project consultants and provide geotechnical data available for site preparation, grading and design of foundations.

6.1.2 The information which District has made available is not part of the Contract Documents and was made available solely for the convenience of the Contractor. It is expressly understood and agreed that the District assumes no responsibility whatsoever in respect to the sufficiency or accuracy of any investigation District has made, the records thereof, or of the interpretations set forth therein, and there is no warranty or guaranty, express or implied, that the conditions indicated by such investigations or records are representative of those existing throughout the Project site or any part thereof, or that unanticipated developments may not occur, or that materials other than, or in proportions different from those indicated, may not be encountered.

6.2 CONTRACTOR'S DUTY TO INSPECT SITE

6.2.1 The availability to the Contractor of District's information shall not be construed as a waiver of the Contractor's duty to examine the Project site. The Contractor represents that prior to submitting a bid, the Contractor visited the Project site and made such independent investigations and examinations deemed necessary to determine the existing conditions, nature of materials to be encountered and other facts concerning or affecting the Work to be performed under the Contract Documents.

6.3 RISK OF UNANTICIPATED SOIL OR SUBSURFACE CONDITIONS

6.3.1 The information which District has made available to Contractor will not relieve the Contractor from the risk of unanticipated soil or subsurface conditions or other physical conditions which were discoverable by a reasonable pre-bid inspection of the project site or from properly fulfilling the terms of the Contract Documents at the Contract Sum.

ARTICLE 7

CHANGES IN THE WORK

7.1 CHANGES

7.1.1 District may, from time to time, order additions, deletions, and other changes in the Work. Changes in the Work may be effected by change order or field order without invalidating the Contract Agreement and without notice to sureties.

7.1.2 Contractor shall proceed promptly with any changes in the Work, unless otherwise provided in the relevant change order, field order, or letter of instruction.

7.1.3 An adjustment of the Contract Time shall not be made unless the change described in the change order affects Work that is on the critical path of the Contract Schedule or otherwise affects critical Work activities.

7.2 CHANGE ORDERS

7.2.1 A change order is a written instrument prepared by District's Representative, which provides for the following:

- .1 A change in the Work, if any.
- .2 An adjustment of the Contract Sum, if any.

- .3 An adjustment of the Contract Time, if any.

Change orders cannot be authorized by District's project architect or by anyone other than District's Representative, unless specifically authorized by the plans and specifications.

7.2.2 If requested, Contractor shall promptly provide District's Representative with a change order proposal, setting forth Contractor's proposed adjustments of the Contract Sum and the Contract Time, if any, for performing the change in the Work. Adjustments of the Contract Sum shall be determined using the methods described in this Section 7.2.

7.2.3 When Work is omitted by change order, the adjustment to the Contract Sum shall be computed on the basis of one or more of the following:

- .1 Unit prices stated in the Contract Documents or agreed upon by District's Representative and Contractor.
- .2 A lump sum agreed upon by District's Representative and Contractor, based upon the estimated costs of the omitted portions of the Work, with no Contractor fee.
- .3 As determined by District's Representative, if District and Contractor cannot agree upon one or both of the methods described above, which determination shall be in accordance with the methods described in Paragraphs 7.2.4 to 7.2.12.

Note that the District retains the right to specify which of the above basis of computation will be required per change order.

7.2.4 EXTRA WORK PERFORMED BY CONTRACTOR. The Contractor will be paid the direct costs for labor, materials and equipment used in performing extra work approved by District's Representative and determined as provided in Paragraphs 7.2.5 "Labor," 7.2.6 "Materials," 7.2.7 "Equipment Rental," 7.2.8 "Equipment on the Work," 7.2.9 "Equipment Not on the Work," 7.2.10 "Owner-Operated Equipment," and 7.2.11 "Dump Truck Rental."

To the total of the direct costs computed as provided in Paragraphs 7.2.5 "Labor," 7.2.6 "Materials," and 7.2.7 "Equipment Rental," there will be added a markup for overhead and profit of twenty-five percent (25%) to the cost of labor, fifteen percent (15%) to the cost of materials, and fifteen percent (15%) to the equipment rental. These markups shall constitute full compensation for all profit and overhead costs, regardless of whether the work was performed by Contractor or a Subcontractor, and shall be deemed to include all items of expense not specifically designated as cost or equipment rental in Paragraphs 7.2.5 "Labor," 7.2.6 "Materials," and 7.2.7 "Equipment Rental." The total payment made as provided herein shall constitute full compensation therefor.

7.2.5 LABOR. Contractor will be paid the cost of labor for the workers (including supervisors when authorized by the District's Representative), used in the actual and direct performance of the work. The cost of labor, whether the employer is the Contractor, Subcontractor, or other forces, will be the sum of the following:

- .1 Actual Wages. The actual wages paid shall include any employer payments to or on behalf of the workers for health and welfare, pension, vacation, and similar purposes.
- .2 Labor Surcharge. To the actual wages, as defined in Subparagraph 7.2.5.1, will be added a labor surcharge set forth in the California Department of Transportation publication entitled Labor Surcharge and Equipment Rental Rates, which is in effect on the date upon which the work is accomplished. The labor surcharge shall constitute full compensation for all payments imposed by State and Federal laws and for all other payments made to or on behalf of the workers, other than actual wages as defined in Subparagraph 7.2.5.1 and subsistence and travel allowance as specified in Subparagraph 7.2.5.3.
- .3 Subsistence and Travel Allowance. The actual subsistence and travel allowance paid to the workers.

7.2.6 MATERIALS. The District reserves the right to furnish any materials it deems advisable, and the Contractor shall have no claims for costs and markup on these materials.

Only materials furnished by the Contractor and necessarily used in the performance of the work will be paid for. The cost of those materials will be the cost to the purchaser, whether Contractor, Subcontractor or from the supplier thereof, except as the following are applicable:

- .1 If a cash or trade discount by the actual supplier is offered or available to the purchaser, it shall be credited to the District notwithstanding the fact that the discount may not have been taken.
- .2 If materials are procured by the purchaser by any method which is not a direct purchase from and a direct billing by the actual supplier to the purchaser, the cost of those materials shall be deemed to be the price paid to the actual supplier as determined by the District's Representative plus the actual costs, if any, incurred in the handling of the materials.
- .3 If the materials are obtained from a supply or source owned wholly or in part by the purchaser, the cost of those materials shall not exceed the price paid by the purchaser for similar materials furnished from that source on contract items or the current wholesale price for those materials delivered to the job site, whichever price is lower.
- .4 If the cost of the materials is, in the opinion of the District's Representative excessive, then the cost of the material shall be deemed to be the lowest current wholesale price at which the materials were available in the quantities concerned delivered to the job site less any discounts as provided in Subparagraph 7.2.6.1.
- .5 If the Contractor does not furnish satisfactory evidence of the cost of the materials from the actual supplier thereof within sixty (60) days after the date of delivery of the material or within fifteen (15) days after acceptance of the Work, whichever occurs first, the District reserves the right to establish the cost of the materials at the lowest current wholesale prices at which the materials were available in the quantities concerned delivered to the location of the work, less any discounts as provided in Subparagraph 7.2.6.1.

7.2.7 EQUIPMENT RENTAL. The Contractor will be paid for the use of equipment at the rental rates listed for that equipment in the California Department of Transportation publication entitled Labor Surcharge and Equipment Rental Rates, which is in effect on the date upon which the work is accomplished and which is a part of the Contract Documents, regardless of ownership and any rental or other agreement, if they may exist, for the use of that equipment entered into by the Contractor, except that for those pieces of equipment with a rental rate of \$10.00 per hour or less as listed in the Labor Surcharge and Equipment Rental Rates publication and which are rented from a local equipment agency, other than Contractor owned, the Contractor will be paid at the hourly rate shown on the rental agency invoice or agreement for the time used on the work as provided in Paragraph 7.2.8 "Equipment on the Work." If a minimum equipment rental amount is required by the local equipment rental agency, the actual amount charged will be paid to the Contractor.

If it is deemed necessary by District's Representative to use equipment not listed in the Labor Surcharge and Equipment Rental Rates publication, a suitable rental rate for that equipment will be established by the District's Representative. The Contractor may furnish any cost data which might assist the District's Representative in the establishment of the rental rate. If the rental rate established by the District's Representative is \$10.00 per hour or less, the provisions above concerning rental of equipment from a local equipment agency shall apply. The rental rates paid as above provided shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals.

Operators of rented equipment will be paid for as provided in Paragraph 7.2.5 "Labor."

All equipment shall, in the opinion of the District's Representative, be in good working condition and suitable for the purpose for which the equipment is to be used. unless otherwise specified, manufacturer's ratings and manufacturer approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment which has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

Individual pieces of equipment or tools not listed in the Labor Surcharge and Equipment Rental Rate publication and having a replacement value of \$500 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefor.

Rental time will not be allowed while equipment is inoperative due to breakdowns.

7.2.8 EQUIPMENT ON THE WORK. The rental time to be paid for equipment on the work shall be the time the equipment is in operation on the extra work being performed and, in addition, shall include the time required to move the equipment to the location of the extra work and return it to the original location or to another location requiring no more time than that required to return it to its original location, except that moving time will not be paid for if the equipment is used at the site of the extra work on other than the extra work. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power, except that no payment will be made if the equipment is used at the site of the extra work on other than the extra work.

The following shall be used in computing the rental time of equipment on the work:

- .1 When hourly rates are listed, less than thirty (30) minutes of operation shall be considered to be 0.5-hour of operation.
- .2 When daily rates are listed, less than four (4) hours of operation shall be considered to be 0.5-day of operation.

7.2.9 EQUIPMENT NOT ON THE WORK. For the use of equipment moved in on the work and used exclusively for extra work paid, the Contractor will be paid the rental rates listed in the California Department of Transportation publication entitled Labor Surcharge and Equipment Rental Rates, which is in effect on the date upon which the work is accomplished, or determined as provided in Paragraph 7.2.7 and for the cost of transporting the equipment to the location of the work and its return to its original location, all in accordance with the following provisions:

- .1 The original location of the equipment to be hauled to the location of the work shall be agreed to by the District's Representative in advance.
- .2 The District will pay the costs of loading and unloading the equipment.
- .3 The cost of transporting equipment in low bed trailers shall not exceed the hourly rates charged by established haulers.
- .4 The cost of transporting equipment shall not exceed the applicable minimum established rates of the Public Utilities Commission.
- .5 The rental period shall begin at the time the equipment is unloaded at the site of the extra work, shall include each day that the equipment is at the site of the extra work, excluding Saturdays, Sundays, and legal holidays unless the equipment is used to perform the extra work on those days, and shall terminate at the end of the day on which the District's Representative directs the Contractor to discontinue the use of the equipment.

The rental time to be paid per day will be in accordance with the following:

Hours Equipment is in Operation	Hours to be paid
0	4
0.5	4.25
1	4.5
1.5	4.75
2	5
2.5	5.25
3	5.5
3.5	5.75

4	6
4.5	6.25
5	6.5
5.5	6.75
6	7
6.5	7.25
7	7.5
7.5	7.75
8	8
Over 8	hours in operation

The hours to be paid for equipment which is operated less than eight (8) hours due to breakdowns shall not exceed eight (8) less the number of hours the equipment is inoperative due to breakdowns.

When hourly rates are listed, less than thirty (30) minutes of operation shall be considered to be 0.5-hour of operation.

When daily rates are listed, payment for 0.5-day will be made if the equipment is not used. If the equipment is used, payment will be made for one (1) day.

The minimum rental time to be paid for the entire rental period on an hourly basis shall not be less than eight (8) hours or, if on a daily basis, shall not be less than one (1) day.

- .6 Should the Contractor desire the return of the equipment to a location other than its original location, the District will pay the cost of transportation in accordance with the above provisions, provided the payment shall not exceed the cost of moving the equipment to the work.
- .7 Payment for transporting, and loading and unloading equipment, as above provided, will not be made if the equipment is used on the work in any other way than upon extra work paid for.

When extra work, other than work specifically designated as extra work in the plans and specifications, is to be paid and the District's Representative determines that the extra work requires the Contractor to move on to the work equipment which could not reasonably have been expected to be needed in the performance of the work, the District's Representative may authorize payment for the use of the equipment at equipment rental rates in excess of those listed as applicable for the use of that equipment subject to the following additional conditions:

- .1 The District's Representative shall specifically approve the necessity for the use of particular equipment on that work,
- .2 The Contractor shall establish to the satisfaction of the District's Representative that the equipment cannot be obtained from the Contractor's normal equipment source or sources and those of the Contractor's Subcontractors,
- .3 The Contractor shall establish to the satisfaction of the District's Representative that the proposed equipment rental rate for the equipment from the proposed source is reasonable and appropriate for the expected period of use,
- .4 The District's Representative shall approve the equipment source and the equipment rental rate to be paid by the District before the Contractor begins work involving the use of that equipment.

7.2.10 OWNER-OPERATED EQUIPMENT. When owner-operated equipment is used to perform extra work, the Contractor will be paid for the equipment and operator, as follows:

Payment for the equipment will be made in accordance with the provisions in Paragraph 7.2.7 "Equipment Rental."

Payment for the cost of labor and subsistence or travel allowance will be made at the rates paid by the Contractor to other workers operating similar equipment already on the project or, in the absence of other workers operating similar equipment, at the rates for that labor established by collective bargaining agreements for the type of workers

and location of the work, whether or not the owner-operator is actually covered by an agreement. A labor surcharge will be added to the cost of labor described herein, in accordance with the provisions in Subparagraph 7.2.5.2 "Labor Surcharge."

To the direct cost of equipment rental and labor, computed as provided herein, will be added the markups for equipment rental and labor as provided in Paragraph 7.2.4 "Extra Work Performed by Contractor."

7.2.11 DUMP TRUCK RENTAL. Dump truck rental shall conform to the provisions of Paragraphs 7.2.7 "Equipment Rental," 7.2.8 "Equipment on the Work," and 7.2.9 "Equipment Not on the Work," except as follows:

- .1 Fully maintained and operated rental dump trucks used in the performance of extra work will be paid for at the same hourly rate paid by the Contractor for use of fully maintained and operated rental dump trucks in performing contract item work.
- .2 In the absence of contract item work requiring dump truck rental, the District's Representative will establish an hourly rental rate to be paid. The Contractor shall provide the District's Representative with complete information on the hourly rental rates available for rental of fully maintained and operated dump trucks.
- .3 The provisions in Paragraph 7.2.5 "Labor" shall not apply to operators of rented dump trucks.
- .4 The rental rates listed for dump trucks in the California Department of Transportation publication entitled Labor Surcharge and Equipment Rental Rates shall not apply.
- .5 To the total of the rental costs for fully maintained and operated dump trucks, including labor, there will be added a markup of fifteen percent (15%). No separate markup will be made for labor.
- .6 The provisions of Paragraph 7.2.10 "Owner-Operated Equipment" shall not apply to dump truck rentals.

7.2.12 WORK PERFORMED BY SPECIAL FORCES OR OTHER SPECIAL SERVICES. When the District's Representative and the Contractor, by agreement, determine that a special service or an item of extra work cannot be performed by the forces of the Contractor or those of any of the Contractor's Subcontractors, that service or extra work item may be performed by a specialist. Invoices for the service or item of extra work on the basis of the current market price thereof may be accepted without a complete itemization of labor, material, and equipment rental costs when it is impracticable and not in accordance with the established practice of the special service industry to provide a complete itemization.

In those instances wherein a Contractor is required to perform extra work necessitating a fabrication or machining process in a fabrication or machine shop facility away from the job site, the charges for that portion of the extra work performed in the facility may, by agreement, be accepted as a specialist billing.

To the specialist invoice price, less a credit to the District for any cash or trade discount offered or available, whether or not the discount may have been taken, will be added fifteen percent (15%) in lieu of the percentages provided in Paragraph 7.2.4 "Extra Work Performed by Contractor."

7.2.13 RECORDS. The Contractor shall maintain records in such a manner as to provide a clear distinction between the direct costs of extra work and the costs of other operations. From the above records, the Contractor shall furnish the District's Representative completed daily extra work reports, either on forms furnished by the District or on computerized facsimiles of the California Department of Transportation's forms acceptable to the District's Representative, for each day's extra work. The daily extra work reports shall itemize the materials used, and shall cover the direct cost of labor and the charges for equipment rental, whether furnished by the Contractor, Subcontractor, or other forces, except for charges described in Paragraph 7.2.12 "Work Performed by Special Forces or Other Special Services." The daily extra work reports shall provide names or identifications and classifications of workers, the hourly rate of pay and hours worked, and also the size, type and identification number of equipment, and hours operated.

Material charges shall be substantiated by valid copies of vendor's invoices. The invoices shall be submitted with the daily extra work reports or, if not available, they shall be submitted with subsequent daily extra work reports. Should the vendor's invoices not be submitted within sixty (60) days after the date of delivery of the material or within fifteen (15) days after completion of the extra work, whichever occurs first, the District reserves the right to establish the cost of the materials at the lowest current wholesale prices at which those materials were available in the quantities concerned, delivered to the location of work, less any discounts as provided in Subparagraph 7.2.6.1.

Daily extra work reports shall be signed by the Contractor or the Contractor's authorized representative.

The District's Representative will compare his or her records with the completed daily extra work reports furnished by the Contractor and make any necessary adjustments. When these daily extra work reports are agreed upon and signed by both parties, the reports shall become the basis of payment for the work performed, but shall not preclude subsequent adjustment based on a later audit by the District.

The Contractor's cost records pertaining to extra work shall be open to inspection or audit by representatives of the District during the life of the Contract Agreement and for a period of not less than four (4) years after the date of the notice of completion or cessation of labor therefor, and the Contractor shall retain those records for that period. Where payment for materials or labor is based on the cost thereof to forces other than the Contractor, the Contractor shall make every reasonable effort to ensure that the cost records of those other forces will be open to inspection and audit by representatives of the District on the same terms and conditions as the cost records of the Contractor. If an audit is to be commenced more than sixty (60) days after the acceptance date of the notice of completion or cessation of labor, the Contractor will be given a reasonable notice of the time when the audit is to begin.

7.2.14 PAYMENT. Payment as provided in Paragraphs 7.2.4 "Extra Work Performed by Contractor" and 7.2.12 "Work Performed by Special Forces or Other Special Services" shall constitute full compensation to the Contractor for performance of extra work and no additional compensation will be allowed therefor. The payment will be made in accordance with the provisions in Section 9.2 "Partial Payment."

7.3 FIELD ORDERS

7.3.1 A field order describing the scope of the change in the Work and the estimated adjustments of the Contract Sum and the Contract Time may be issued by District's Representative to order a change in the Work before the terms of the change incorporated into a change order. If appropriate, Contractor shall promptly provide District's Representative with a change order proposal setting forth its estimate of the adjustments of the Contract Sum and the Contract Time, if any, for performing the change in the Work. The field order will be superseded by a change order which shall include the actual adjustments, if any, of the Contract Sum and the Contract Time, as well as the scope of the change in the Work. Only District's Representative has the authority to issue field orders, except when otherwise provided in the plans or Specifications.

7.3.2 If the field order provides for an adjustment of the Contract Sum, the adjustment shall be based upon one of the methods described in Section 7.2.

7.3.3 Upon receipt of a field order, Contractor shall promptly proceed with the change in the Work. Contractor shall advise District's Representative of its agreement or disagreement with the method, if any, provided in the field order for determining the proposed adjustments of the Contract Sum and the Contract Time.

7.3.4 A field order signed by Contractor indicates the agreement of Contractor therewith, including Contractor's agreement to the estimated adjustments of the Contract Sum and the Contract Time and the methods used to determine those adjustments. Such agreement shall be effective immediately and will be followed with a change order at such time as the actual adjustments are determined.

7.3.5 If Contractor does not agree to the adjustment of the Contract Sum set forth in a field order, District's Representative shall determine the adjustment of the Contract Sum in accordance with the provisions of Paragraphs 7.2.4 through 7.2.12 and Contractor shall comply with the provisions of Paragraph 7.2.13 regarding records and documentation of actual costs.

7.4 LETTERS OF INSTRUCTION

7.4.1 District's Representative may issue letters of instruction which make interpretations or clarifications of the Contract Documents that do not change the scope of Work or involve an adjustment of the Contract Sum or the Contract Time and that are consistent with the intent of the Contract Documents. Letters of instruction shall be binding upon Contractor. Contractor shall promptly carry out the requirements of such letters of instruction.

7.5 VARIATION IN QUANTITY OF UNIT PRICE WORK

7.5.1 District has the right to increase or decrease the quantity of any unit price item for which an estimated quantity is stated in the Contract Agreement. If the actual quantity of any unit price item is more than one-hundred twenty-five percent (125%) or less than seventy-five percent (75%) of the estimated quantity stated for such item in the Contract Agreement, an equitable adjustment in the unit price may be made if requested by either District or Contractor.

ARTICLE 8

CONTRACT TIME

8.1 COMMENCEMENT OF THE WORK

8.1.1 The date of commencement of the Work shall be set forth in the notice to proceed. The date of commencement of the Work shall not be postponed by the failure of Contractor, or of persons or firms for whom Contractor is responsible, to act.

8.2 PROGRESS AND COMPLETION

8.2.1 By signing the Contract Agreement, Contractor represents to District that the Contract Time is reasonable for performing the Work and that Contractor is able to perform the Work within the Contract Time.

8.2.2 Contractor shall not, except by agreement or instruction of District's Representative in writing, commence operations on the Project site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by Contractor. The dates of commencement and completion of the Work shall not be changed by the effective date of such insurance.

8.2.3 Contractor shall proceed expeditiously with adequate forces and shall achieve Final Completion within the Contract Time. If Contractor is not diligently proceeding with the prosecution of the Work as scheduled, Contractor shall, immediately and at no additional cost to District, take all measures necessary, including working such overtime, additional shifts, Sundays, or holidays, as may be required to correct said delays and to ensure no further delays to the completion of the Work.

8.3 DELAY

8.3.1 As used herein, the following terms shall have the following meanings:

- .1 "Excusable Delay" means any delay of the completion of the Work beyond the expiration of the Contract Time caused by conditions beyond the control and without the fault or negligence of Contractor such as embargoes, fire, unavoidable casualties, unusual delays in transportation, national emergency, and abnormal stormy and inclement weather conditions in which the Work cannot continue. The financial inability of Contractor or any Subcontractor and any default of any Subcontractor, without limitation, shall not be deemed conditions beyond Contractor's control. An Excusable Delay may entitle Contractor to an extension of the Contract Time, in accordance with Paragraphs 7.1.3 and 8.3.2, but shall not entitle Contractor to any adjustment of the Contract Sum.
- .2 "Compensable Delay" means any delay of the completion of the Work beyond the expiration date of the Contract Time caused by the gross negligence or willful acts of District or District's Representative, and which delay is unreasonable under the circumstances involved and not within the contemplation of the parties. A Compensable Delay may entitle Contractor to an extension of the Contract Time, in accordance with Paragraph 8.3.2 and subject to Paragraph 7.1.3, and/or an adjustment of the Contract Sum, in accordance with Paragraph 8.3.3. Except as provided herein,

Contractor shall have no Claim for damage or compensation for any delay, interruption, hindrance, or disruption.

- .3 "Unexcusable Delay" means any delay of the completion of the Work beyond the expiration of the Contract Time resulting from causes other than those listed in Subparagraphs 8.3.1.1 and 8.3.1.2. An Unexcusable Delay shall not entitle Contractor to an extension of the Contract Time or an adjustment of the Contract Sum.

8.3.2 CLAIMS FOR ADJUSTMENT OF THE CONTRACT TIME FOR DELAYS. Contractor may make a Claim for an extension of the Contract Time, for an Excusable Delay or a Compensable Delay, subject to the following:

- .1 If an Excusable Delay and a Compensable Delay occur concurrently, the maximum extension of the Contract Time shall be the number of days from the commencement of the first delay to the cessation of the delay which ends last.
- .2 If an Unexcusable Delay occurs concurrently with either an Excusable Delay or a Compensable Delay, the maximum extension of the Contract Time shall be the number of days, if any, by which the Excusable Delay or the Compensable Delay exceeds the Unexcusable Delay.
- .3 If an Unexcusable Delay occurs concurrently with both an Excusable Delay and a Compensable Delay, the maximum extension of the Contract Time shall be the number of days, if any, by which the number of days determined pursuant to Subparagraph 8.3.2.1 exceeds the number of days of the Unexcusable Delay.

8.3.3 CLAIMS FOR ADJUSTMENT OF THE CONTRACT SUM FOR DELAYS. For a Compensable Delay, Contractor shall only be entitled to an adjustment of the Contract Sum in an amount equal to the sum of the following:

- .1 Actual and unavoidable additional costs of labor, material, and equipment provided by Contractor at the Project site as a result of the Compensable Delay,
- .2 plus actual and unavoidable additional costs incurred by Contractor for labor, material, and equipment provided by Subcontractors as a result of the Compensable Delay,
- .3 plus actual and unavoidable additional wages or salaries and fringe benefits and payroll taxes of supervisory and administrative personnel provided by Contractor and Subcontractors at the Project site as a result of the Compensable Delay,
- .4 plus the amount of the Contractor fee determined by applying the provisions of Paragraph 7.2.4 to the sum of items .1, .2, and .3 above.

To be entitled to an adjustment of the Contract Sum for Compensable Delay, Contractor shall comply with the provisions of Sections 4.2 through 4.5. Except as provided herein, Contractor shall have no Claim for damage or compensation for any delay, interruption, hindrance, or disruption.

8.3.4 The parties agree that District's exercise of its rights to order changes in the Work, regardless of the extent and number of changes, or to suspend the Work, is within the contemplation of the parties and shall not be the basis for any Claim for Compensable Delay. The rights of Contractor to adjustments of the Contract Time and the Contract Sum, based on changes ordered in the Work or suspension of the Work, shall be solely governed by the provisions of Articles 7 and 13, respectively.

8.3.5 The determination of whether a delay is an Excusable Delay, Compensable Delay, or Unexcusable Delay shall not be affected by the fact that any earlier delay occurred, regardless of fault or causation

ARTICLE 9

PAYMENTS AND COMPLETION

9.1 COST BREAKDOWN

9.1.1 Within thirty (30) days after signing the Contract Agreement, but in any event prior to the first partial payment request, Contractor shall submit to District's Representative a detailed schedule of values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. The cost breakdown shall itemize as separate line items the cost of each Work activity and all other costs, including warranties, record documents, insurance, bonds, overhead expenses, and the total allowance for profit, the total of which shall equal the Contract Sum. The schedule of values, when approved by District, shall become the basis for determining the cost of Work performed for Contractor's partial payment requests.

9.2 PARTIAL PAYMENT

9.2.1 District agrees to pay monthly to Contractor, subject to Paragraph 9.4.2, an amount equal to ninety percent (90%) of the sum of the following:

- .1 Cost of the Work in permanent place as of the end of the preceding month,
- .2 plus cost of materials not yet incorporated in the Work, subject to Paragraph 9.3.5,
- .3 less amounts previously paid.

9.2.2 The balance of the Contract Sum shall be paid after Final Completion in accordance with Section 9.7.

9.3 PARTIAL PAYMENT REQUEST

9.3.1 On or before the tenth (10th) day of the month or such other date as is established by the Contract Documents, Contractor shall submit to District's Representative an itemized partial payment request for the cost of the Work in permanent place, as approved by District's Representative, which has been completed in accordance with the Contract Documents as of the last day of the preceding month, less amounts previously paid. The partial payment request shall be prepared as follows:

- .1 Itemize in accordance with the cost breakdown.
- .2 Include such data substantiating Contractor's right to payment as District's Representative may reasonably require, such as invoices, certified payrolls, daily time and material records, and, if securities are deposited in lieu of retention pursuant to Section 9.5, a certification of the market value of all such securities as of a date not earlier than five (5) days prior to the date of the partial payment request.
- .3 Itemize retention.

9.3.2 Partial payment requests shall not include requests for payment on account of (1) changes which have not been authorized by change orders or (2) amounts Contractor does not intend to pay a Subcontractor because of a dispute or other reason.

9.3.3 If required by District, a partial payment request shall be accompanied by (1) a summary showing payments that will be made to Subcontractors covered by such request and (2) unconditional waivers and releases of Claims and stop notices from each Subcontractor listed in the preceding partial payment request covering sums disbursed pursuant to that preceding partial payment request.

9.3.4 Contractor warrants that, upon submittal of a partial payment request, all Work for which partial payment authorizations have been previously issued and payment has been received from District shall be free and clear of all Claims, stop notices, security interests, and encumbrances in favor of Contractor, Subcontractors, or other persons or firms entitled to make Claims by reason of having provided labor, materials, or equipment relating to the Work.

9.3.5 At the sole discretion of District, District's Representative may approve for inclusion in the partial payment

request the cost of materials not yet incorporated in the Work but already delivered and suitably stored either at the Project site or at some other appropriate location acceptable to District's Representative. In such case, Contractor shall furnish evidence satisfactory to District's Representative (1) of the cost of such materials and (2) that such materials are under the exclusive control of Contractor. Only materials to be incorporated in the Work will be considered for payment. Any payment shall not be construed as acceptance of such materials nor relieve Contractor from sole responsibility for the care and protection of such materials; nor relieve Contractor from risk of loss to such materials from any cause whatsoever; nor relieve Contractor from its obligation to complete the Work in accordance with the Contract Documents; nor act as a waiver of the right of District to require fulfillment of all terms of the Contract Agreement.

9.4 PARTIAL PAYMENT AUTHORIZATION

9.4.1 If Contractor has submitted a partial payment request in accordance with Section 9.3, District's Representative shall, not later than five (5) working days after the date of receipt of the partial payment request, issue to District, with a copy to Contractor, a partial payment authorization for such amount as District's Representative determines to be properly due.

9.4.2 Approval of all or any part of a partial payment request may be withheld, a partial payment authorization may be withheld, and all or part of a previous partial payment authorization may be nullified and that amount withheld from a current partial payment authorization on account of any of the following:

- .1 Defective work not remedied.
- .2 Third-party claims against Contractor or District arising from the acts or omissions of Contractor or Subcontractors.
- .3 Stop notices.
- .4 Failure of Contractor to make timely payments due Subcontractors for material or labor.
- .5 A reasonable doubt that the Work can be completed for the balance of the Contract Sum then unpaid.
- .6 Damage to District or a separate contractor for which Contractor is responsible.
- .7 Reasonable evidence that the Work will not be completed within the Contract Time; and that the unpaid balance of the Contract Sum would not be adequate to cover District's damages for the anticipated delay.
- .8 Failure of Contractor to maintain and update record documents.
- .9 Failure of Contractor to submit schedules or their updates as required by the Contract Documents.
- .10 Performance of Work by Contractor without properly processed Shop Drawings.
- .11 Liquidated damages assessed in accordance with Article 4 of the Contract Agreement.
- .12 Any other failure of Contractor to perform its obligations under the Contract Documents.

9.4.3 Subject to the withholding provisions of Paragraph 9.4.2, District shall pay Contractor the amount set forth in the partial payment authorization no later than fifteen (15) days after the issuance of the partial payment authorization.

9.4.4 Neither a partial payment authorization nor any partial payment made by District shall constitute acceptance of defective work.

9.5 DEPOSIT OF SECURITIES IN LIEU OF RETENTION AND DEPOSIT OF RETENTION INTO ESCROW

9.5.1 At the request and expense of Contractor, a substitution of securities may be made for any monies retained by District under Section 9.2 to ensure performance under the Contract Documents. Securities equivalent in value to the retention amount required by the Contract Documents for each partial payment authorization shall be deposited by Contractor with a state or federally chartered bank in the State of California ("Escrow Agent"), which shall hold

such securities pursuant to the escrow agreement referred to in Paragraph 9.5.3 until final payment is due in accordance with Section 9.7. Securities shall be valued as often as conditions of the securities market warrant, but in no case less than once per month. Contractor shall deposit additional securities so that the current market value of the total of all deposited securities shall be at least equal to the total required amount of retention.

9.5.2 Alternatively to Paragraph 9.5.1, and at the request and expense of Contractor, District shall deposit retentions directly with an escrow agent. Contractor may direct the investment of such deposited retention into interest bearing accounts or securities, and such deposits or securities shall be held by the escrow agent upon the same terms provided for securities deposited by Contractor.

9.5.3 A prerequisite to the substitution of securities in lieu of retentions or the deposit of retentions into escrow shall be the execution by Contractor, District, and escrow agent of an escrow agreement for deposit of securities in lieu of retention and deposit of retention in the following form:

ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION

This Escrow Agreement is made and entered into by and between _____ whose address is _____ hereinafter called "District," _____ whose address is _____ hereinafter called "Contractor" and _____ whose address is _____ hereinafter called "Escrow Agent."

For the consideration hereinafter set forth, the District, Contractor, and Escrow Agent agree as follows:

- 1. Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by District pursuant to the Construction Contract entered into between the District and Contractor for _____ in the amount of _____ dated _____ (hereinafter referred to as the "Contract"). Alternatively, on written request of the Contractor, the District shall make payments of the retention earnings directly to the escrow agent. When the Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agent shall notify the District within 10 days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between the District and Contractor. Securities shall be held in the name of _____, and shall designate the Contractor as the beneficial owner.*
- 2. The District shall make partial payments to the Contractor for those funds which otherwise would be withheld from partial payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.*
- 3. When the District makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of the Contractor until the time that the escrow created under this Contract is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the District pays the Escrow Agent directly.*
- 4. Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of the District. These expenses and payment terms shall be determined by the District, Contractor, and Escrow Agent.*
- 5. The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the District.*
- 6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from the District to the Escrow Agent that District consents to the withdrawal of the amount sought to be withdrawn by Contractor.*
- 7. The District shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven days' written notice to the Escrow Agent from the owner of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the District.*
- 8. Upon receipt of written notification from the District certifying that the Contract is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payments of fees and charges.*
- 9. Escrow Agent shall rely on the written notifications from the District and the Contractor pursuant to Sections 5 to 8, inclusive, of this agreement and the District and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.*
- 10. The names of the persons who are authorized to give written notice or to receive written notice on behalf of the District and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:*

On behalf of District:

On behalf of Contractor:

Title

Title

Name

Name

Signature

Signature

Address

Address

On behalf of Escrow Agent:

Title

Name

Signature

Address

At the time the Escrow Account is opened, the District and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement by their proper officers on the date first set forth above.

District:

Contractor:

Title

Title

Name

Name

Signature

Signature

Leg.H. Amended by Stats 1991, Ch. 933, Sec. 1; Stats 1993, Ch. 1195, Sec. 25.5.

9.6 BENEFICIAL OCCUPANCY

9.6.1 District reserves the right, at its option and convenience, to occupy or otherwise make use of all or any part of the Work at any time prior to Final Completion upon ten (10) days' notice to Contractor. Such occupancy or use is herein referred to as "Beneficial Occupancy." Beneficial Occupancy shall be subject to the following conditions:

- .1 District's Representative will make an inspection of the portion of the Project to be beneficially occupied and prepare a list of items to be completed or corrected prior to Final Completion. Prior to Beneficial Occupancy, District will issue a certificate of Beneficial Occupancy on District's form.
- .2 Beneficial Occupancy by District shall not be construed by Contractor as an acceptance by District of that portion of the Work which is to be occupied.
- .3 Beneficial Occupancy by District shall not constitute a waiver of existing Claims of District or Contractor against each other.
- .4 The guarantee to repair periods, as defined in Section 12.2, will commence upon the first dates of actual occupancy or use of portions of the Work actually occupied and equipment or systems fully utilized.
- .5 District shall pay all normal operating and maintenance costs resulting from its use of equipment in areas beneficially occupied.
- .6 District shall pay all utility costs which arise out of the Beneficial Occupancy.
- .7 Contractor shall not be responsible for providing security in areas beneficially occupied.
- .8 Contractor shall continue to maintain all insurance required by the Contract Documents in full force and effect.

9.7 FINAL COMPLETION AND FINAL PAYMENT

9.7.1 Upon receipt of notice from Contractor that the Work is ready for final inspection, District's Representative will make such inspection. Final Completion shall be when District's Representative determines that the Work is fully completed and in accordance with the Contract Documents. District will file a notice of completion within ten (10) days after Final Completion. After receipt of the final payment request, if District's Representative determines that Final Completion has occurred, District's Representative will issue the final authorization for payment.

9.7.2 Neither final payment nor any retention shall become due until Contractor submits the following items to District's Representative:

- .1 The final payment request and all submittals required by Section 9.3 and the Contract Documents.
- .2 If required by District, conditional releases from Subcontractors entitled to receive any portion of the final payment and unconditional releases from Contractor, such releases to be in a form satisfactory to District.
- .3 All guarantees and warranties procured by Contractor from Subcontractors, all operating manuals for equipment installed in the Project, record documents, and all other submittals required by the Contract Documents.
- .4 Contractor has furnished to District written consent from the performance bond and payment bond sureties to such release of retention.

If releases are required, Contractor shall pay or cause to be paid to Subcontractors the amount stated in the conditional releases within five (5) days after receipt of the final payment and shall promptly thereafter furnish evidence of such payment to District. If District does not require releases, the final payment shall be made, subject to the satisfaction of all other conditions to final payment, thirty-five (35) days after the filing of the notice of completion.

9.7.3 Acceptance of final payment by Contractor shall constitute a waiver of all Claims, except those previously made in writing and identified by Contractor as unsettled at the time of the final payment request.

ARTICLE 10

PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

10.1.1 Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract Documents.

10.2 SAFETY OF PERSONS AND PROPERTY

10.2.1 Contractor shall take adequate precautions for safety of persons and property and shall provide adequate protection to prevent damage, injury, or loss to the following:

- .1 Employees involved in the Work and other persons who may be affected thereby.
- .2 The Work in place and materials and equipment to be incorporated therein, whether in storage on or off the Project site, under care, custody, or control of Contractor or Subcontractors.
- .3 Other property at the Project site and adjoining property.

10.2.2 Contractor shall erect and maintain, as required by existing conditions and performance of the Work, adequate safeguards for safety and protection, including providing adequate lighting and ventilation, posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying District and users of adjacent sites and utilities.

10.2.3 When use or storage of explosives, other hazardous materials, equipment, or unusual methods is necessary for execution of the Work, Contractor shall exercise the utmost care and carry on such activities only under the supervision of properly qualified personnel.

10.2.4 Contractor shall designate a responsible member of Contractor's organization at the Project site whose duty shall be the prevention of accidents. That person shall be the Contractor's superintendent, unless otherwise designated by Contractor in writing to District and District's Representative.

10.2.5 Contractor shall not load or permit any part of the Work or the Project site to be loaded so as to endanger the safety of persons or property.

10.3 EMERGENCIES

10.3.1 In an emergency affecting the safety of persons or property, Contractor shall act to prevent or minimize damage, injury, or loss. Contractor shall promptly notify District's Representative, which notice may be oral followed by written confirmation, of the occurrence of such an emergency and Contractor's action.

ARTICLE 11

INSURANCE AND BONDS

11.1 LIABILITY INSURANCE

11.1.1 Contractor shall, at its expense, purchase and maintain in full force and effect such insurance as will protect itself and District, District's boards and commissions and members thereof, and District's officers, employees and agents from Claims, such as for bodily injury, death, and property damage, which may arise out of or result from the Work required by the Contract Documents, whether such Work is done by Contractor, by any Subcontractor, by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable.

11.1.2 The following liability policies and coverages shall be furnished by Contractor:

- .1 The Contractor shall obtain commercial general liability insurance from one or more U.S. domiciled insurance companies licensed to do business in the State of California with an A.M. Best Company rating of "B" or better or, in the alternative, an unlicensed U.S. domiciled company or companies with an "A" rating, which provides coverage for bodily injury, personal injury and property damage liability in the amount of at least **\$1,000,000 per occurrence, and \$2,000,000 in the aggregate**, with a maximum policy deductible of **\$5,000.00**. Said insurance coverage shall be evidenced by a certificate of insurance with policy endorsements and shall be executed by an authorized official of the insurer(s).

11.1.3 Contractor's liability insurance as required by Paragraph 11.1.2 shall, by endorsement to the policies, include the following:

- .1 An additional insured provision stating that District, District's boards and commissions and members thereof, and District's officers, employees and agents are covered as insureds with respect to liabilities arising out of work or operations performed by or on behalf of the Contractor, including materials, parts, or equipment furnished in connection with such work or operations, and with respect to liability arising out of automobiles owned, leased, hired, or borrowed by or on behalf of the Contractor. However, coverage shall not extend to indemnity for the active negligence of the additional insureds in any case where an agreement to indemnify the additional insureds would be invalid under Subdivision (b) of Section 2782 of the California Civil Code.
- .2 A severability of interest clause stating that, "The term 'insured' is hereby used severally and not collectively, but the inclusion herein of more than one insured shall not operate to increase the limits of the insurers' liability."
- .3 A cross-liability clause stating that, "In the event of claims being made under any of the coverages of the policies referred to herein by one or more insureds hereunder for which another insured hereunder may be liable, then the policies shall cover such insureds against whom a claim is made or may be made in the same manner as if separate policies had been issued to each insured hereunder. Nothing contained herein, however, shall operate to increase the insurers' limits of liability as set forth in the insuring agreements."
- .4 A provision stating that District, District's boards, commissions and members thereof, and District's officers, employees and agents shall not by reason of their inclusion as insureds incur liability to the insurance carriers for payment of premiums for such insurance.
- .5 A provision stating that the coverage provided by such insurance shall be primary and not in excess of or contributing with respect to any insurance, indemnity coverage afforded by a risk pool, or self-insurance maintained by District, District's board, commissions and members thereof, or District's officers, employees and agents. This provision, however, shall only apply as per the stipulations of Subparagraph 11.1.3.1.
- .6 A provision stating that the coverage provided by such insurance shall not be subject to cancellation or modification without thirty (30) days' prior written notice to District.

11.1.4 Certificates of insurance evidencing the insurance policies required by this Section 11.1, as well as copies

of all endorsements to such policies required by Paragraph 11.1.3, shall be submitted by Contractor to District prior to commencing Work on the Project. However, acceptance of such certificates of insurance and endorsement by District shall not in any way limit Contractor's liabilities under the Contract Documents. At the request of District, Contractor shall also submit to District copies of the insurance policies obtained by Contractor.

11.1.5 In the event Contractor does not comply with these insurance requirements, District may, at its option, provide insurance coverage to protect District, District's boards, commissions and members thereof, and District's officers, employees and agents; and the cost of such insurance shall be paid by Contractor and may be deducted from the Contract Sum.

11.1.6 Contractor shall, by mutual agreement with District and at District's cost, furnish any additional liability insurance as may be required by District. Contractor shall provide certificates of insurance evidencing such additional insurance.

11.2 WORKER'S COMPENSATION INSURANCE

11.2.1 Contractor shall, at its expense, purchase and maintain in full force and effect worker's compensation insurance as required by Federal and State of California law. A certificate of insurance or other documentation acceptable to District evidencing such insurance coverage shall be provided by Contractor to District prior to commencing Work on the Project. Contractor shall also require all of its Subcontractors to maintain this insurance coverage.

11.3 MISCELLANEOUS INSURANCE PROVISIONS

11.3.1 Any insured loss is to be adjusted with District and made payable to District on behalf of the insureds, as their interests may appear. District shall have the power to adjust and settle any loss with the insurers unless, within five (5) working days after the loss, one of the parties in interest shall object in writing to District's exercise of this power; and if such objection be made, the matter shall be subject to resolution as provided in Article 4.

11.4 PERFORMANCE BOND AND PAYMENT BOND

11.4.1 Contemporaneous with the execution of the Contract Agreement, and before commencement of any Work required by the Contract Documents, Contractor shall provide District with separate payment and performance bonds, each in a sum at least equal to the Contract Sum. These bonds will be provided on forms acceptable to District by surety companies licensed and admitted to do business in the State of California and are named in the current list of "Surety Companies Acceptable on Federal Bonds" as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. The surety shall have not less than an "A" minimum rating in the current "Best's Key Rating Guide, Property-Liability."

11.4.2 If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business in California terminated, Contractor shall, within five (5) days thereafter, substitute another surety and bond, both of which shall be acceptable to District.

ARTICLE 12

UNCOVERING AND CORRECTION OF WORK

12.1 UNCOVERING OF WORK

12.1.1 All Work shall be inspected by District's Representative before being covered. If any Work is covered before it has been inspected, such Work must, upon written request by District's Representative, be uncovered for District's Representative's observation and be replaced at Contractor's expense without adjustment of the Contract Time or the Contract Sum.

12.2 CORRECTION OF DEFECTIVE WORK AND GUARANTEE TO REPAIR PERIOD

12.2.1 The term "Guarantee to Repair Period" means a period of one (1) year, unless a longer period of time is

specified in the Contract Agreement or Supplementary Conditions, commencing as follows:

- .1 For space beneficially occupied or for separate systems fully utilized prior to Final Completion pursuant to Section 9.6, from the first date of such Beneficial Occupancy or actual use, as established in a certificate of Beneficial Occupancy.
- .2 For all Work other than .1 above, from the date of Final Completion.

12.2.2 Contractor shall (1) correct defective work that becomes apparent during the progress of the Work or during the Guarantee to Repair Period and (2) replace, repair, or restore to District's satisfaction any other parts of the Work and any other real or personal property which is damaged or destroyed as a result of defective work or the correction of defective work. Contractor shall promptly commence such correction, replacement, repair, or restoration upon notice from District's Representative or District, but in no case later than ten (10) days after receipt of such notice; and Contractor shall diligently and continuously prosecute such correction to completion. Contractor shall bear all costs of such correction, replacement, repair, or restoration, and all losses resulting from such defective work, including additional testing, inspection, and compensation for District's Representative's services and expenses. Contractor shall perform corrective work at such times that are acceptable to District and in such a manner as to avoid, to the extent practicable, disruption to District's activities.

12.2.3 If immediate correction of defective work is required for life safety or the protection of property and is performed by District or separate contractors, Contractor shall pay to District all reasonable costs of correcting such defective work. Contractor shall replace, repair, or restore to District's satisfaction any other parts of the Work and any other real or personal property which is damaged or destroyed as a result of such defective work or the correction of such defective work.

12.2.4 Contractor shall remove from the Project site portions of the Work and materials which are not in accordance with the Contract Documents and which are neither corrected by Contractor nor accepted by District.

12.2.5 If Contractor fails to commence correction of defective work within ten (10) days after notice from District or District's Representative or fails to diligently prosecute such correction to completion, District may correct the defective work in accordance with Section 2.4; and, in addition, District may remove the defective work and store salvageable materials and equipment at Contractor's expense.

12.2.6 If Contractor fails to pay the costs of such removal and storage as required by Paragraphs 12.2.4 and 12.2.5 within ten (10) days after written demand, District may, without prejudice to other remedies, sell such materials at auction or at private sale, or otherwise dispose of such material. Contractor shall be entitled to the proceeds of such sale, if any, in excess of the costs and damages for which Contractor is liable to District, including reasonable attorneys' fees and expenses and compensation for District's Representative's services and expenses. If such proceeds of sale do not cover costs and damages for which Contractor is liable to District, the Contract Sum shall be reduced by such deficiency. If there are no remaining payments due Contractor or the remaining payments are insufficient to cover such deficiency, Contractor shall promptly pay the difference to District.

12.2.7 Contractor's obligations under this Article 12 are in addition to and not in limitation of its warranty under Section 3.4 or any other obligation of Contractor under the Contract Documents. Enforcement of Contractor's express warranties and guarantees to repair contained in the Contract Documents shall be in addition to and not in limitation of any other rights or remedies District may have under the Contract Documents or at law or in equity for defective work. Nothing contained in this Article 12 shall be construed to establish a period of limitation with respect to other obligations of Contractor under the Contract Documents. Establishment of the Guarantee to Repair Period relates only to the specific obligation of Contractor to correct the Work and in no way limits either Contractor's liability for defective work or the time within which proceedings may be commenced to enforce Contractor's obligations under the Contract Documents.

12.3 ACCEPTANCE OF DEFECTIVE WORK

12.3.1 Notwithstanding the provisions of Section 12.2, District shall have the option, at its sole discretion and by notice to Contractor, to accept defective work instead of requiring its removal or correction, in which case the Contract Sum shall be reduced by an amount equal to the difference between the value to District such Work would have had were it complete, correct, and in conformity with the Contract Documents and the value to District of such defective work. Such option shall be exercised solely by notice to Contractor and shall not be implied from any act or omission by District or District's Representative. If there are no remaining payments of the Contract Sum to be made to Contractor or if the remaining payments and retention are insufficient to cover the amount of the reduction of the Contract Sum, Contractor shall promptly pay to District the amount of any such deficiency.

ARTICLE 13

TERMINATION OR SUSPENSION OF THE CONTRACT

13.1 TERMINATION BY CONTRACTOR

13.1.1 Subject to Paragraph 13.1.2, Contractor shall have the right to terminate the Contract Agreement only upon the occurrence of one of the following:

- .1 The Work is stopped for ninety (90) consecutive days, through no act or fault of Contractor, any Subcontractor, or any employee or agent of Contractor or any Subcontractor, due to an issuance of an order of a court or other public authority having jurisdiction or due to an act of government, such as a declaration of a national emergency making material unavailable.
- .2 District fails to perform any material obligation under the Contract Documents and fails to cure such default within thirty (30) days after receipt of notice from Contractor stating the nature of such default.
- .3 Repeated suspensions by District, other than such suspensions as are agreed to by Contractor under Section 13.3, which constitute in the aggregate more than twenty percent (20%) of the Contract Time or ninety (90) days, whichever is larger.

13.1.2 Upon the occurrence of one of the events listed in Paragraph 13.1.1, Contractor may, upon ten (10) days' additional notice to District and District's Representative, and provided that the condition giving rise to Contractor's right to terminate is continuing, terminate the Contract Agreement.

13.1.3 Upon termination by Contractor, District shall pay to Contractor the sum determined by Paragraph 13.4.4. Such payment shall be the sole and exclusive remedy to which Contractor is entitled in the event of termination of the Contract Agreement by Contractor pursuant to Section 13.1; and Contractor will be entitled to no other compensation or damages and expressly waives the same.

13.2 TERMINATION BY DISTRICT FOR CAUSE

13.2.1 District shall have the right to terminate the Contract Agreement for cause at any time after the occurrence of any of the following events:

- .1 Contractor becomes insolvent or files for relief under the bankruptcy laws of the United States.
- .2 Contractor makes a general assignment for the benefit of its creditors or fails to pay its debts as the same become due.
- .3 A receiver is appointed to take charge of Contractor's property.
- .4 The commencement or completion of any Work activity is fourteen (14) days or more behind the date set forth in the contract schedule for such Work activity, and which results in an Unexcusable Delay.
- .5 Contractor abandons the Work.

13.2.2 Upon the occurrence of any of the following events, District shall have the right to terminate the Contract Agreement for cause if Contractor fails to promptly commence to cure such default and diligently prosecute such cure within five (5) days after notice from District, or within such longer period of time as is reasonably necessary to complete such cure:

- .1 Contractor persistently or repeatedly refuses or fails to supply skilled supervisory personnel, an adequate number of properly skilled workers, proper materials, or necessary equipment to prosecute the Work in accordance with the Contract Documents.
- .2 Contractor fails to make prompt payment of amounts properly due Subcontractors after receiving payment from District.
- .3 Contractor disregards Applicable Code Requirements.
- .4 Contractor persistently or materially fails to execute the Work in accordance with the Contract Documents.
- .5 Contractor is in default of any other material obligation under the Contract Documents.
- .6 Any legal proceeding is commenced against Contractor which, in the opinion of District's Representative, may interfere with the performance of the Work.
- .7 In the event Contractor is involved in a labor dispute which threatens the progress or cost of Work, or which disrupts District's operations, District may suspend or discontinue the Work of Contractor or any Subcontractor or terminate the Contract Agreement for cause.

13.2.3 Upon any of the occurrences referred to in Paragraphs 13.2.1 and 13.2.2, District may, at its election and by notice to Contractor, terminate the Contract Agreement and take possession of the Project site and all materials, supplies, equipment, tools, and construction equipment and machinery thereon owned by Contractor; accept the assignment of any or all of the subcontracts; and then complete the Work by any method District may deem expedient. If requested by District, Contractor shall remove any part or all of Contractor's materials, supplies, equipment, tools, and construction equipment and machinery from the Project site within seven (7) days of such request; and if Contractor fails to do so, District may remove or store, and after ninety (90) days sell, any of the same at Contractor's expense.

13.2.4 If the Contract Agreement is terminated by District as provided in this Section 13.2, Contractor shall not be entitled to receive any further payment until the expiration of thirty-five (35) days after Final Completion and acceptance of all Work by District.

13.2.5 If the unpaid balance of the Contract Sum exceeds the cost of completing the Work, including all additional costs and expenses made necessary thereby, plus all losses sustained, including any liquidated damages provided under the Contract Documents, such excess shall be paid to Contractor. If such costs, expenses, losses, and liquidated damages exceed the unpaid balance of the Contract Sum, Contractor shall pay such excess to District.

13.2.6 No termination shall impair District's rights under the performance bond and payment bond required under Section 11.4. No termination or action taken by District after termination shall prejudice any other rights or remedies of District provided by law or by the Contract Documents upon such termination; and District may proceed against Contractor and/or against the surety companies who provided the performance bond and payment bond required under Section 11.4 to recover all losses suffered by District.

13.3 SUSPENSION BY DISTRICT FOR CONVENIENCE

13.3.1 District may, at any time and from time to time, without cause, order Contractor, in writing, to suspend, delay, or interrupt the Work in whole or in part for such period of time, up to ninety (90) days, as District may determine, with such period of suspension to be computed from the date of delivery of the written order. Such order shall be specifically identified as a "Suspension Order" under this Section 13.3. The Work may be stopped for such further period as the parties may agree. Upon receipt of a Suspension Order, Contractor shall, at District's expense, comply with its terms and take all reasonable steps to minimize costs allocable to the Work covered by the

Suspension Order during the period of Work stoppage. Within ninety (90) days after the issuance of the Suspension Order, or such extension to that period as is agreed upon by Contractor and District, District shall either cancel the Suspension Order or delete the Work covered by such Suspension Order by issuing a change order.

13.3.2 If a Suspension Order is canceled or expires, Contractor shall continue with the Work. A change order will be issued to cover any adjustments of the Contract Sum or the Contract Time necessarily caused by such suspension. Any Claim by Contractor for an adjustment of the Contract Sum or the Contract Time shall be made within twenty-one (21) days after the end of the Work suspension.

13.3.3 The provisions of this Section 13.3 shall not apply if a Suspension Order is not issued by District. A Suspension Order shall not be required to stop the Work as permitted or required under any other provision of the Contract Documents.

13.4 TERMINATION BY DISTRICT FOR CONVENIENCE

13.4.1 District may, at its option, terminate this Contract Agreement, in whole or from time to time in part, at any time by giving notice to Contractor. Upon such termination, Contractor agrees to waive any Claims for damages, including loss of anticipated profits, on account thereof; and, as the sole right and remedy of Contractor, District shall pay Contractor in accordance with Paragraph 13.4.4.

13.4.2 Upon receipt of a notice of termination under this Section 13.4, Contractor shall, unless the notice directs otherwise, do the following:

- .1 Immediately discontinue the Work to the extent specified in the notice.
- .2 Place no further orders or subcontracts for materials, equipment, services, or facilities, except as may be necessary for completion of such portion of the Work as is not discontinued.
- .3 Promptly cancel, on the most favorable terms reasonably possible, all subcontracts to the extent they relate to the performance of the discontinued portion of the Work.
- .4 Thereafter do only such Work as may be necessary to preserve and protect Work already in progress and to protect materials, plants, and equipment on the Project site or in transit thereto.
- .5 Leave the Project site in a safe condition.

13.4.3 Upon termination of the Contract Agreement, the obligations of the Contract Documents shall continue as to portions of the Work already performed and, subject to Contractor's obligations under Paragraph 13.4.2, as to bona fide obligations assumed by Contractor prior to the date of termination.

13.4.4 Upon such termination, District shall pay to Contractor the sum of the following:

- .1 The amount of the Contract Sum allocable to the portion of the Work properly performed by Contractor as of the date of termination, less sums previously paid to Contractor,
- .2 plus an amount equal to the lesser of Fifty Thousand Dollars (\$50,000) or five percent (5%) of the difference between the Contract Sum and the amount of the Contract Sum allocable to the portion of the Work properly performed by Contractor as of the date of termination,
- .3 plus previously unpaid costs of any items delivered to the Project site which were fabricated for subsequent incorporation in the Work,
- .4 plus any proven losses with respect to materials and equipment directly resulting from such termination,
- .5 plus reasonable demobilization costs.

The above payment shall be the sole and exclusive remedy to which Contractor is entitled in the event of termination of the Contract Agreement by District pursuant to Section 13.4; and Contractor will be entitled to no other compensation or damages and expressly waives same.

ARTICLE 14

STATUTORY REQUIREMENTS

14.1 NONDISCRIMINATION

14.1.1 For purposes of this Section 14.1, the term Subcontractor shall not include suppliers, manufacturers, or distributors.

14.1.2 Contractor shall comply and shall ensure that all Subcontractors comply with the California Fair Employment and Housing Act, as set forth in Section 12900, and the applicable sections that follow, of the California Government Code.

14.1.3 Contractor agrees as follows during the performance of the Work:

- .1 Contractor shall not willfully discriminate against any employee or applicant for employment because of race, color, religion, sex, age, ancestry, national origin, sexual orientation, handicap, veteran's status, medical condition (as defined in Section 12926 of the California Government Code), marital status, or citizenship (within the limits imposed by law or District's policy). All applicants for employment and employees are to be treated without regard to their race, color, religion, sex, age, ancestry, national origin, sexual orientation, handicap, veteran's status, medical condition (as defined in Section 12926 of the State of California Government Code), marital status, or citizenship (within the limits imposed by law or District's policy). Such equal treatment shall apply, but not be limited to, employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, a notice of equal employment opportunity setting forth the provisions of this Paragraph 14.1.3.
- .2 Contractor and all Subcontractors will permit access to their records of employment, employment advertisements, application forms, and other pertinent data and records by District or any appropriate agency of the State of California designated by District for the purposes of investigation to ascertain compliance with this Section 14.1. The outcome of the investigation may result in the following:
 - .1 A finding of willful violation of the provisions of the Contract Agreement or of the Fair Employment and Housing Act may be regarded by District as (1) a basis for determining that Contractor is not a "responsible bidder" as to future contracts for which such Contractor may submit bids or (2) a basis for refusing to accept or consider the bids of Contractor for future contracts.
 - .2 District may deem a finding of willful violation of the Fair Employment and Housing Act to have occurred upon receipt of written notice from the Fair Employment Practices Commission that it has (1) investigated and determined that Contractor has violated the Fair Employment and Housing Act and (2) issued an order under the State of California Government Code Section 12970 or obtained an injunction under Government Code Section 12973.
 - .3 Upon receipt of such written notice from the Fair Employment Practices Commission, District may notify Contractor that, unless it demonstrates to the satisfaction of District within a stated period that the violation has been corrected, Contractor's bids on future Projects will not be considered.
- 3 Contractor agrees that, should District determine that Contractor has not complied with this Section 14.1, Contractor shall forfeit to District, as a penalty, for each day or portion thereof, for each person who was denied employment as a result of such non-compliance, a penalty of Fifty Dollars (\$50.00) per day. Such penalty amounts may be recovered from Contractor; and District

may deduct any such penalty amounts from the Contract Sum.

- .4 Nothing contained in this Section 14.1 shall be construed in any manner so as to prevent District from pursuing any other remedies that may be available at law.
- .5 Contractor shall meet the following standards for affirmative compliance and provide District with satisfactory evidence of such compliance upon District's request, which shall be evaluated in each case by District:
 - .1 Contractor shall notify its superintendent and other supervisory personnel of the nondiscrimination requirements of the Contract Documents and their responsibilities thereto.
 - .2 Contractor shall notify all sources of employee referrals (including unions, employment agencies, and the State of California Employment Development Department) of the nondiscrimination requirements of the Contract Documents by sending to such sources and by posting the notice of equal employment opportunity.
 - .3 Contractor or its representative shall, through all unions with whom it may have agreements, develop agreements that (1) define responsibilities for nondiscrimination in hiring, referrals, upgrading, and training and (2) implement a nondiscrimination program, in terms of the unions' specific areas of skill and geography, such that qualified minority women, non-minority women, and minority men shall be available and given an equal opportunity for employment.
 - .4 Contractor shall notify District of opposition to the nondiscrimination requirements of the Contract Documents by individuals, firms, or organizations during the term of the Contract Agreement.
- .6 Contractor shall include the provisions of the foregoing Subparagraphs 14.1.3.1 through 14.1.3.5 in all subcontracts with Subcontractors, so that such provisions will be binding upon each such Subcontractor.

14.2 APPRENTICES

14.2.1 For purposes of this Section 14.2, the term "Subcontractor" shall not include suppliers, manufacturers, and distributors.

14.2.2 Attention is directed to Sections 1777.5, 1777.6, and 1777.7 of the State of California Labor Code and Title 8, California Code of Regulations, Section 200, and the applicable sections that follow. To ensure compliance and complete understanding of the law requiring apprentices, and specifically the required ratio thereunder, Contractor or Subcontractors should, where some question exists, contact the Division of Apprenticeship Standards, 45 Fremont Street, Suite 1050, San Francisco, California, (415) 975-2035, or one of its branch offices prior to commencement of the Work. Responsibility for compliance with these requirements lies with Contractor.

14.2.3 In the event Contractor willfully fails to comply with this Section 14.2, it will be considered in violation of the requirements of the Contract Agreement.

14.2.4 Nothing contained herein shall be considered or interpreted as prohibiting or preventing the hiring by Contractor or Subcontractors of journey worker trainees who may receive on-the-job training to enable them to achieve journey worker status in any craft or trade under standards other than those set forth for apprentices.

14.3 WORK DAY

14.3.1 Contractor shall not permit any worker to labor more than eight (8) hours during any one (1) calendar day or more than forty (40) hours during any one (1) calendar week, except as permitted by law and in such cases only upon such conditions as are provided by law. Contractor shall forfeit to District, as a penalty, Twenty-Five Dollars (\$25.00) for each worker employed in the execution of the work by Contractor, or any Subcontractor, for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one (1)

calendar day and forty (40) hours in any one (1) calendar week in violation of the terms of this Paragraph 14.3.1 or in violation of the provisions of any law of the State of California. Such forfeiture amounts may be deducted from the Contract Sum. Contractor and each Subcontractor shall keep, or cause to be kept, an accurate record showing the actual hours worked each calendar day and each calendar week by each worker employed on the Project, which record shall be kept open at all reasonable hours to the inspection of District, its officers and agents, and to the inspection of the appropriate enforcement agency of the State of California.

ARTICLE 15

MISCELLANEOUS PROVISIONS

15.1 GOVERNING LAW

15.1.1 The Contract Agreement and all of the Contract Documents incorporated into the Contract Agreement shall be interpreted under and governed by the laws of the State of California.

15.2 SUCCESSORS AND ASSIGNS

15.2.1 District and Contractor respectively bind themselves and their successors, permitted assigns, and legal representatives to the other party and to the successors, permitted assigns, and legal representatives of such other party in respect to covenants, agreements, and obligations contained in the Contract Documents. Neither party to the Contract Agreement shall assign the Contract Agreement, in whole or in part, without prior written consent of the other party. Notwithstanding any such assignment, each of the original contracting parties shall remain legally responsible for all of its obligations under the Contract Documents.

15.3 RIGHTS AND REMEDIES

15.3.1 All District's rights and remedies under the Contract Documents shall be cumulative and in addition to and not in limitation of all other rights and remedies of District under the Contract Documents or otherwise available at law or in equity.

15.3.2 No action or failure to act by District or District's Representative shall constitute a waiver of a right afforded them under the Contract Documents, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing. No waiver by District or District's Representative of any breach or default shall constitute a waiver of any other breach or default; nor shall any such waiver constitute a continuing waiver.

15.3.3 No provision contained in the Contract Documents shall create or give to third parties any Claim or right of action against District, District's Representative, or Contractor.

15.4 SURVIVAL

15.4.1 The provisions of the Contract Documents which by their nature survive termination of the Contract Agreement or Final Completion, including all warranties, indemnities, payment obligations, and District's right to audit Contractor's books and records, shall remain in full force and effect after Final Completion or any termination of the Contract.

15.5 COMPLETE AGREEMENT

15.5.1 The Contract Documents constitute the full and complete understanding of the parties and supersede any previous agreements or understandings, oral or written, with respect to the subject matter hereof. The Contract Documents may be modified only by a written instrument signed by both parties or as provided in Article 7.

15.6 SEVERABILITY OF PROVISIONS

15.6.1 If any one or more of the provisions contained in the Contract Documents should be invalid, illegal, or unenforceable in any respect, the validity, legality, and enforceability of the remaining provisions contained herein shall not in any way be affected or impaired thereby.

15.7 DISTRICT'S RIGHT TO AUDIT

15.7.1 District and entities and agencies designated by District shall have access to and the right to audit and copy at District's cost all of Contractor's books, records, contracts, correspondence, instructions, drawings, receipts, vouchers, purchase orders, and memoranda relating to the Work. Contractor shall preserve all such records and other items for a period of at least three (3) years after Final Completion.

15.8 NOTICES

15.8.1 Except as otherwise provided, all notices, requests, demands, and other communications to be given under the Contract Documents shall be in writing and shall be transmitted by one of the following methods:

- .1 Personally delivered.
- .2 Sent by telecopy where receipt is confirmed.
- .3 Sent by courier where receipt is confirmed.
- .4 Sent by registered or certified mail, postage prepaid, return receipt requested.

Such notices and other communications shall be deemed given and received upon actual receipt in the case of all except registered or certified mail; and, in the case of registered or certified mail, on the date shown on the return receipt or the date delivery during normal business hours was attempted. Such notices and communications shall be given at the respective street addresses set forth in such Contract Documents. Such street addresses may be changed by notice given in accordance with this Section 15.8.

15.9 TIME OF THE ESSENCE

15.9.1 Time limits stated in the Contract Documents are of the essence of the Contract Agreement.

III. SPECIAL PROVISIONS

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III. SPECIAL PROVISIONS

RIVERBEND PARK RENOVATION PH 2 – AMPHITHEATER

A. DEFINITIONS

The work embraced herein shall be done in accordance with the appropriate provisions of construction details of the specifications, entitled “State of California, Department of Transportation, Standard Specifications” dated October 2019, as revised, which specifications are hereinafter referred to as the Standard Specifications, and the City of Oroville Design Criteria and Improvement Standards, the County of Butte Design Criteria and Improvement Standards, insofar as the same may apply, and in accordance with the following special provisions.

Whenever in the Standard Specifications the following terms are used, they shall be understood to mean and refer to the following:

Department of Transportation - The Feather River Recreation and District (FRRPD).

Director, Department of Transportation - The General Manager of FRRPD.

Engineer - The Landscape Architect for FRRPD acting either directly or through properly authorized agents, such agents acting within the scope of the particular duties entrusted to them.

Laboratory - The designated laboratory authorized by the GENERAL MANAGER to test materials and work involved in the contract.

State - The Feather River Recreation and Park District (FRRPD).

Other terms appearing in the Standard Specifications, the General Conditions, and these Special Provisions, shall have the intent and meaning specified in Section 1, Definition of Terms of the Standard Specifications.

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

B. DESCRIPTION OF WORK

The work, in general, to be done under this contract consists of coordination, installation and construction of a new amphitheater including demolition, grading, drainage, excavation, concrete, electrical, landscape, irrigation, amenities and signage; all within the confines of Riverbend Park in Oroville, CA.

PROJECT NAME: RIVERBEND PARK RENOVATION PH 2 AMPHITHEATER

C. PRE-BID MEETING

An Optional bidders' conference has been scheduled for **THURSDAY, MARCH 12, 2020 at 2:00 PM**, at Riverbend Park Amphitheater located at 50 Montgomery Street, Oroville, CA 95965 to tour the site, discuss issues pertaining to the project and answer contractor questions that may arise. Attendance at the bidder's conference is highly recommended to review the existing conditions of Amphitheater area that are to be modified and replaced.

D. AWARD

The award of contract, if awarded, will be to the **lowest responsible bidder** whose proposal complies with the entire requirement described. The award, if awarded, will be made within fourteen - (14) days after the opening of the bids. All bids will be compared on the basis of the initial Engineer's Estimate of quantities of work to be done. Award will be based on the lowest responsible bidder for the combined total of the base bid and add alternate schedules. The District has the option of accepting none, or any number and combination of bid alternatives.

E. REQUIRED LISTING OF PROPOSED SUBCONTRACTORS

The third paragraph of section 8.01.01, "Subcontracting," of the state Standard Specifications shall not apply. The Contractor shall not be required to perform at least 50% of the original total contract price with Contractor's own organization.

Each proposal shall have listed therein the name and address of each subcontractor, the associated bid item numbers, and the dollar value of the subcontractors work to whom the bidder proposes to subcontract portions of the work, in accordance with the Subletting and Subcontracting Fair Practices Act, commencing with Section 4100 of the Public Contract Code. The list shall include all subcontractors regardless of the value of the subcontract amount. The bidder's attention is invited to other provisions of said Act related to the imposition of penalties for failure to observe its provisions by using unauthorized subcontractors or by making unauthorized substitutions.

A sheet for listing the subcontractors, as required herein, is included in the Proposal. If there will be no subcontractors enter "None" on the subcontractor's listing sheet.

F. COOPERATION

Attention is directed to Section 7-1.14, of the Standard Specifications.

Should construction or other work of any other nature be under way by other forces or by other contractors within or adjacent to the limits of the work herein specified, the Contractor shall cooperate with all other such contractors or other forces to the end that any delay or hindrance to their work will be avoided.

G. PROGRESS OF THE WORK AND TIME FOR COMPLETION

The Contractor shall begin work within fourteen (14) calendar days after receiving a written notice to proceed from the Feather River Recreation and Park District and shall diligently prosecute the same to completion before the expiration of **JUNE 15, 2020** from the date of said NOTICE TO PROCEED to the end of SUBSTANTIAL COMPLETION.

DUE TO A SCHEDULED PUBLIC EVENT AT RIVERBEND PARK ON SATURDAY APRIL 4, 2020, THE CONTRACTOR SHALL NOT ENGAGE IN CONSTRUCTION ACTIVITIES ON THIS DATE.

Substantial Completion is considered the stage in the progress of Construction when the Construction is sufficiently complete in accordance with the Contract Documents so that the District can occupy or utilize the site for its intended use.

H. LIQUIDATED DAMAGES

The Contractor agrees that if the Work is not completed within the Contract Time's damages would be extremely difficult or impracticable to determine. Therefore, and Contractor agree that if Contractor fails to complete the Work within the Contract Time, Contractor shall pay to, on demand, as liquidated damages and not as a penalty, the sum of One Thousand Dollars (\$1,000) for each day after the expiration of the Contract Time that the Work remains incomplete, and that this amount is a reasonable estimate of and a reasonable sum for such damages may deduct any liquidated damages owed to , as determined by , from any payments otherwise payable to Contractor under this Contract.

I. PLANS AND SPECIFICATIONS FURNISHED

The Contractor will be furnished, free of charge, three (3) copies of the contract drawings and contract specifications. Any additional copies requested by the Contractor will be furnished to the Contractor at the actual cost of reproduction. The Contractor shall retain an approved set of plans and specifications on the job at all times during the progress of the work.

J. MATERIALS

The Contractor shall furnish for use under these Special Provisions all materials required to complete the attached contract.

1. **Quantity Certificates:** The Contractor shall present a certified weight slip to the Engineer or a designee for all materials used in the contract measured by weight. The above-mentioned weight slips shall be submitted to the Engineer on the same day that the material has been delivered to the construction area.

2. **Proposed Materials Submittal:** The Contractor shall provide a submittal booklet containing product information for the materials proposed for the project. The Engineer will review and approve the submittals. Material submittals failing to meet the required specifications will be rejected. The Contractor shall re-submit new product information for review and approval by the Engineer.

K. QUANTITIES

The preliminary estimates of the quantities of work to be done and materials to be furnished are approximate only, being given as a basis for the comparison of bids, and the Feather River Recreation and Park District does not expressly or by implication agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class or portion of the work or to omit portions of the work that may be deemed necessary or expedient by the Engineer.

Section 4-1.03 of the Standard Specifications shall not apply. The District reserves the right to increase or decrease the quantities in excess of 25% without adjustment to the contract unit price.

L. CONSTRUCTION PROCEDURES AND DETAILS

1. **Order of Work:** The order of work shall be determined by the Contractor and approved by the Engineer.

Order of work shall conform to the provisions in Section 5-1.05, "Order of Work", of the Standard Specifications and these Special Provisions. The Contractor shall submit a construction schedule to the Engineer for review and approval at least seven working days prior to the distribution of notices as described in Section 7 below. A pre-construction meeting shall occur before work is initiated on site.

2. **Contractor Daily Work Hours:**

The Contractor shall restrict his work hours on all Project related work to 7 a.m. to 9 p.m. daily, except Sundays and holidays, when his work hours shall be from 10 a.m. to 6 p.m. unless otherwise approved by the Engineer. The restriction shall include all associated move on, set up, equipment and material delivery, and other project activities not strictly related to the daily progress of the project.

Should the Contractor, his subcontractors, or others under the Contractor's control not comply with the requirements contained in this Special Provision, the District will deduct a penalty charge from the Contractor's next progress payment for each occurrence. The penalty assessed shall be \$500.00 for the first occurrence, and \$1000.00 for each occurrence thereafter.

3. **Protection of Work:** The Contractor shall provide adequate protection of all work until final completion. This shall include, but not be limited to, barricades, lights, flags, cones, fencing, barricades, visual surveillance and other devices both to protect the Contractor's work and provide public safety. Payment for protection of work shall be included in other contract items.

Trees and other site amenities disturbed or damaged by the Contractor's work shall be replaced or restored at the Contractor's expense.

4. **Damage or Loss of Contractor's Supplies or Employee's Property:** The Feather River Recreation and Park District does not assume any liability from fire, theft, accident or any other cause resulting in damage or loss of the Contractor's supplies, materials or equipment, or of personal property or belongings of Contractor's employees.

5. **Property Damage:** The Contractor shall note the following:

- a. Any private property or property damaged or altered in any way during the performance of the work under this contract shall be reported promptly to the Engineer and shall be rectified in an approved manner back to its former condition, prior to damage, at the Contractor's expense within five (5) calendar days of occurrence.
- b. Any damage noted, or seen, by the Contractor that has occurred by any means other than during the performance of the contractor's work, whether by vandalism or any other means shall be promptly reported to the Engineer and shall be rectified in an approved manner back to its former condition, prior to damage, at the Contractor's expense within five (5) calendar days of occurrence. Particularly, all hazardous conditions shall be reported.

6. **Notification of Utilities:** The Contractor shall notify all utility companies, such as Pac Bell and PG&E, 48 hours prior to commencing underground work by contacting Underground Service Alert at 1-800-642-2444.
7. **Citizen Notification:** The Contractor shall notify all residents and businesses that may be affected by or are in the immediate vicinity of the construction at least 72 hours prior to construction. Notification shall be in writing and include a brief description of the work, starting date, scheduled date of completion, Contractor contact person and Contractor telephone number. Notification shall be submitted to the for review and approval at least 24 hours prior to distribution. Notice to be hand carried by Contractor Representative. Should a change in the work schedule occur after the residents and/or businesses have been notified the Contractor shall notify the residents and/or businesses of the change in schedule within 24 hours of the originally scheduled starting date.

When the construction requires prohibiting parking, "No Parking" signs shall be posted along the construction routes. The signs shall include the dates and times that no parking periods will be in effect. "No Parking" signs shall be mounted on Class I barricades and placed in the gutter pan not more than 100' apart. Signs shall be posted a minimum of 24 hours in advance of construction and immediately removed upon completion. Should the Contractor not commence work after 24 hours from placement of the signs, the signs shall be removed. If a vehicle is parked in a properly posted no parking area and is prohibiting the progression of work, the Contractor shall notify the Oroville Police Department to arrange for removal of the vehicle.

Failure to comply with the provisions for notification shall result in the suspension of all work until the provisions have been met.

Full compensation for conforming to the requirements of this provision shall be considered as included in the prices paid for the various contract items and no additional compensation will be allowed.

8. **Access to Dwellings:** The Contractor shall provide access to all dwellings within the construction zone at all times throughout the project.
9. **Air and Water Pollution Control and Dust Control:** The Contractor's attention is directed to Standard Specifications, Section 7 - Legal Relations and Responsibilities and Section 10 - Dust Control for requirements related to air and water pollution control and dust control. The Contractor shall abide by the following regarding the control of dust:
 - a. All exposed earth surfaces shall be watered periodically during construction activities. This practice shall be conducted twice during the morning and afternoon work hours. Further, the frequency of watering shall increase if wind speeds exceed 15 miles per hour.
 - b. Soil, grindings or other debris carried onto street surfaces by construction equipment shall be removed on a daily basis.
 - c. The Contractor shall submit a water pollution control plan to prevent discharge into the walkway drains, and shall be responsible for adhering to the requirements of the Standard Specifications, including providing such water pollution control measures as called for in these specifications and as directed by the Engineer.
 - d. Compensation for providing air and water pollution control and dust control shall be included in the prices paid for the other items of work in the contract and no additional payment shall be made.
 - e. All grading operations shall be suspended when winds (as instantaneous gusts) exceed 20 miles per hour as directed by the AQMD.
 - f. Water active construction sites at least twice daily as directed by the Engineer. Frequency shall be based on the type of operation, coil and wind exposure.
 - g. All trucks hauling dirt, sand, soil or other loose materials shall be covered or shall maintain at least two feet of freeboard (i.e. minimum vertical distance between top of the load and the trailer in accordance with the requirements of CVC 23114.
 - h. Sweep streets at the end of the day if visible soil materials are carried onto adjacent public paved roads (recommend water sweeper with reclaimed water).

- i. Cover inactive storage piles.
- j. Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 24 hours. The telephone number of the BCAQMD shall also be visible to ensure compliance with BCAQMD Rule 201 & 207 (Nuisance and Fugitive Dust Emissions).

10. Water: The Contractor shall furnish for use under these Special Provisions all water required and as set forth under Sections 10, 17, 19, and 25 of the Standard Specifications.

11. Notice of Potential Claim: See General Conditions

12. Confined Space Entry

The proposed construction involves the entry into confined spaces as defined in Part 1910 of Title 29 of the Code of Federal Regulations and General Safety Order Article 108, Title 8 of the California Administrative Code. The Contractor shall comply with the requirements of said regulations. The Contractor shall submit copies of an Entry Permit(s) and Confined Space Entry Program addressing operating, rescue procedures, surveillance procedures, and training as required by the state regulations.

13. Testing

The Contractor shall pay for all tests as determined by the Engineer. Shall include all tests normally performed by the Engineer to check the Contractor's compliance with the contract provisions.

14. Hazardous Waste in Excavation

If the Contractor encounters material in excavation which he/she has reason to believe may be hazardous waste, as defined by §25117 of the Health and Safety code, he/she shall immediately so notify the Engineer in writing. Excavation in the immediate area of the suspected hazardous material shall be suspended until the Engineer authorizes the work to be resumed. If such suspension delays the current controlling operation, the Contractor will be granted an extension of time as provided in Section 8-1.07, "Liquidated Damages", of the Standard Specifications.

If such suspension delays the current controlling operation more than 2 working days, the delay will be considered a right of way delay and the Contractor will be compensated for such delay as provided in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

The Department reserves the right to use other forces for exploratory work to identify and determine the extent of such material and for removing hazardous material from such area.

15. Unanticipated Cultural Resources Discovery

Construction operations on this project may unearth or uncover cultural resources of a historic or prehistoric nature. If buried or obscured cultural materials are observed during vegetation removal and/or construction, the work in the area of discovery shall cease, the District shall be notified, the encountered resource shall then be identified, recorded, and an assessment made of the resource by a qualified archaeologist.

The right is reserved to the Feather River Recreation and Park District and its authorized agents, including a qualified archaeologist and appropriate professionals to enter upon the right-of-way for the purpose of investigating and/or excavating and removing such resources. The Contractor shall cooperate with forces engaged in such work and shall conduct his operations in such a manner to avoid any unnecessary delay or hindrance to the work being performed by such other forces.

The Contractor shall immediately notify the Feather River Recreation and Park District of any delays to his operations as a direct result of the discovery of possible cultural resources which were not indicated on the plans or in the Special Provisions. Any such delays will be considered right-of-way delays within the meaning of Section 8-1.09, "Right of Way Delays," and compensation for such delay will be determined in accordance with said Section 8-1.09. The Contractor shall be entitled to no other compensation for any such delay.

16. Right of Public Utilities

The rights of Public Utilities to enter upon the work for the purpose of making changes necessitated by the improvement are as specified in Section 8-1.10 of the Standard Specifications.

17. Maintenance and Control of Traffic

- a. Description of Work: The Contractor shall supply at his own expense all flagmen, detour signs, barricades and all other traffic control devices and personnel in compliance with provisions of Section 7-1.08 - Public Convenience, Section 7-1.09 - Public Safety and Section 12 - Construction Area Traffic Control Devices of the Standard Specifications, and as ordered by the Engineer, necessary to provide a satisfactory level of safety and minimum inconvenience to the general public.

Nothing in these Special Provisions shall be construed as relieving the Contractor from his responsibility as provided in said Section 7-1.09.

The Contractor shall provide the Engineer with a Traffic Control Plan for each separate element of work seven (7) working days prior to starting work or the pre-construction meeting, whichever is earliest. The Engineer retains the right to modify the plan as he may determine necessary.

The Contractor or his representative and all subcontractors shall have a copy of the approved Traffic Control Plan pertinent to the work in progress on the jobsite at all times. Failure to adhere to the Traffic Control Plan shall be grounds for the District, City of Oroville or the County of Butte to require the Contractor to stop the work until traffic control is in compliance with the approved Traffic Control Plan.

Should the Contractor or his subcontractors be required to stop work by direction of the Engineer due to non-compliance with the Traffic Control Plan, the Feather River Recreation and Park District will deduct a penalty charge from the Contractor's next progress payment for each occurrence. The penalty shall amount to \$250.00 for the first occurrence and \$500.00 for each occurrence thereafter.

During Contractor working hours a minimum of one (1) traffic lane (in each direction - 4 lane street), not less than twelve (12') feet wide shall be open for public use. During non-working hours all traveled lanes, on all roadways, shall remain open. Whenever vehicles or equipment are parked on the pavement or on the shoulder, within 6 feet of a travel lane, the parking area shall be delineated with fluorescent traffic cones or portable delineators placed on a taper in advance of the parked vehicles or equipment or along the closed portion of the pavement or shoulder at 25-foot intervals to a point approximately twenty-five (25') feet past the last 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), as appropriate, shall be mounted on a telescoping flag tree with flags.

Whenever a traffic lane is to be closed to public traffic, the Contractor shall install a traffic control system in accordance with the current "MANUAL OF TRAFFIC CONTROLS - Warning Signs, Lights, and Devices for Use in Performance of Work Upon Highways."

Designated legal holidays are: January 1st, Martin Luther King's birthday, February 12th, the third Monday in February, the last Monday in May, July 4th, the first Monday in September, November 11th, Thanksgiving Day, and December 25th. When a designated legal holiday falls on a Saturday or Sunday, the preceding Friday or the following Monday shall be designated the legal holiday.

The Contractor shall keep current and notify the local Police, Oroville Area Transit System (OATS), and Fire Departments of his construction operation and traffic control changes three (3) days before work is to begin or traffic changes are made. The Contractor shall at no time obstruct bus stops without prior written authorization from the City. The Contractor shall cooperate with local authorities relative to handling traffic through the area and shall make his own arrangements in keeping the work area clear of parked vehicles.

When leaving a work area and entering a roadway carrying public traffic, the Contractor's equipment, whether empty or loaded, shall in all cases yield to public traffic.

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

Wherever the Contractor's operations obliterate pavement delineation (lane lines, either pavement markers or painted lane lines or both), such pavement delineation shall be replaced by either permanent or temporary delineation before opening the traveled way to the traffic. Temporary delineation shall consist of reflective traffic line tape applied in pieces not less than 12 inches long nor less than 4 inches wide spaced no more than 12 feet apart. Reflective traffic line tape shall be applied in accordance with the manufacturer's instructions. Temporary delineation shall be the same color as the permanent delineation. Full compensation for temporary delineation shall be considered as included in the prices paid for the work and no separate payment will be made.

18. Access to Site and Staging Area

- a. Description of Work: The contractor is responsible for maintaining access to park site and staging area and to fix and repair any damage to area at completion of project as needed to return area to its original condition.
 - i. When not in use, all contractors and subcontractor vehicles shall be parked within staging area.
 - ii. Prior to starting work, Contractor shall obtain approval of access routes to the site and mark the staging area on site for approval by the District or County Inspector. Two sets of keys for staging area gates shall be provided to the District or County Inspector. The Contractor shall leave the staging area clean and free of debris.
- b. Temporary Fencing: If a fence is provided for the staging area, it must be temporary Chain Link Fence, 6' high, shall be furnished and constructed, for the staging area, maintained and later removed as specified in these Special Provisions and as directed by the District Inspector.
 - i. Posts shall be either metal or wood at the contractor's option.
 - ii. Galvanizing and painting of steel items will not be required.
 - iii. Treating wood with wood preservatives will not be required.
 - iv. Concrete footings for metal posts will not be required.
 - v. Insert posts into portable concrete blocks or steel supports as needed to support fence.
 - vi. Install two sets of 8' wide locking gates as needed for access to the staging area. Provide the District Inspector with two sets of keys to gate locks.
 - vii. Temporary fences that are damaged from any cause during the progress of the work shall be repaired or replaced at the Contractor's expense.
 - viii. When no longer required for the work as determined by the District Inspector, temporary fences shall be removed. Removed materials shall become the property of the Contractor and shall be removed from the site of the work.
 - ix. Holes caused by the removal of temporary fences shall be backfilled in accordance with the provisions in the "Preservation of Property" section of the Standard Specifications

19. Safety Construction Fencing and Barricades

- a. Description of Work: Temporary 4' Vinyl Fencing shall be furnished and constructed maintained and later removed as per plans, specifications, these Special Provisions and as directed per the District or County Inspector. Locations include the set back around elderberry bushes and existing trees in areas of construction, per Drawing Notes "Tree Protection Measures" and surrounding open trenches during construction.
 - i. Steel, wood or plastic Traffic Barricade with Flasher Light shall be furnished and set in front of all open trenches that are within five feet of pedestrian or vehicular paths and roads.

- ii. Materials may be of commercial quality providing the dimensions and sizes of said materials are equal to, or greater than the dimensions shown on the plans or specifications.
- iii. Used materials may be used providing such used materials are structurally sound and suitable for the purpose intended.
- iv. Posts shall be either metal or wood at the contractor's option.
- v. Galvanizing and painting of steel items will not be required.
- vi. Treating wood with wood preservatives will not be required.
- vii. Concrete footings for metal posts will not be required.
- viii. Safety fencing and barricades that are damaged from any cause during the progress of the work shall be repaired or replaced at the Contractor's expense.
- ix. When no longer required for the work as determined by the District Inspector, safety fences and barricades shall be removed. Removed materials shall become the property of the Contractor and shall be removed from the site of the work.
- x. Holes caused by the removal of safety fencing and barricades shall be backfilled in accordance with the provisions in the "Preservation of Property" section of the Standard Specifications.

20. Construction Layout and Staking

- a. Description of Work: Stakes or marks will be set by the Contractor as the Contractor determines to be necessary to establish the lines and grades required for the completion of the work specified in these specifications, on the plans and in the Special Provisions.

21. Clearing and Grubbing

- a. Description of Work: Clearing and grubbing shall conform to the provisions in Section 16, "Clearing and Grubbing," of the Standard Specifications and these Special Provisions.

22. Existing Highway Facilities

The work performed in connection with various existing highway facilities shall conform to the provisions in Section 15, "Existing Highway Facilities," of the Standard Specifications and these Special Provisions.

23. Excavation

- a. Description of Work: All references to "Excavation" shall be equally interchangeable with "Roadway Excavation". All Excavation shall conform to the provisions of Section 19, "Earthwork" of the Standard Specifications and these Special Provisions.

Excavation shall consist of performing all operations necessary to excavate earth, rock, and all other materials upon which the fill, aggregate base, or other material is to be constructed; to build embankment, in the location and to the elevation and form required; to backfill ditches and depressions caused by the removal of obstructions; to furnish all equipment necessary for these operations, and the performances of all incidental work of whatever nature that may be required to build the grade and maintain it in the form specified. Included in the work shall be all associated grading areas to drain, and the scarification and recompacting to 90% relative compaction of the top 6 inches of the subgrade.

Surplus Material: All surplus excavated material shall be collected, hauled and deposited at a location specified by the Engineer. Only if directed to do so in writing by the engineer may surplus excavated material be collected, hauled and deposited away from the project by the Contractor and shall be paid as a part of this item.

Local Borrow: Local borrow shall conform to Section 19-7, "Borrow Excavation" of the Standard Specifications and these Special Provisions.

24. Aggregate Base

- a. Description of Work: Aggregate Base shall conform to the provisions in Section 26, "Aggregate Bases" of the Standard Specifications and these Special Provisions and shall be constructed to the thickness and dimensions indicated on the plans. The maximum size of aggregate shall be three-

quarters (3/4) inch as set forth in Section 26, or as specified by the Engineer. Aggregate Base shall be Class 2.

25. Water

- a. Description of Work: The Contractor shall furnish for use under these Special Provisions all water required and as set forth under Sections 10, 17, 19, and 25 of the Standard Specifications.
- b. Measurement and Payment: The cost for furnishing water shall be considered as being included in the contract unit price paid for other items of work, and no separate payment will be allowed.

26. Miscellaneous Concrete Construction

- a. Description of Work: Curbs, sidewalks and PCC pavement shall conform to the provisions in Section 73, "Concrete Curbs and Sidewalks," of the Standard Specifications and these Special Provisions.

Subgrade preparation shall conform to the provisions of Section 73-1.02 of the Standard Specifications. The Contractor shall be responsible for performing grading, including furnishing fill material and excavating, as necessary to establish finish grade for placement of concrete sidewalk, driveway, handicap ramp, valley gutter, and mow curb construction. Subgrade shall be compacted to a relative density of 90% in conformance with California Test Method No. 216.

No concrete shall be placed until the subgrade and forms have been reviewed for satisfactory compaction, alignment, and grade, and approved by the Engineer.

- b. Pre-molded Expansion Joints, 1/4-inch-wide, shall be installed in all curbs and sidewalks as follows:
 - i. As shown on Drawings.
 - ii. At maximum 48-foot intervals in all new curb and gutter construction.
- c. Control Joints, 1/4-inch-wide, 1/4-inch radius, scored at 1/4-inch-depth of concrete being placed, shall be constructed at maximum 24-foot intervals in all new curbs, gutters, and sidewalks. Weakened plane joints shall be constructed in the ramps in accordance with the applicable provisions of Section 40-1.08(B) of the Standard Specifications.
- d. Extruded curb, gutter and sidewalk construction shall not be used without prior approval by the Engineer.
- e. Materials:
 - i. Concrete: Construction of all sidewalks, handicap ramps, curbs, gutters and driveways shall be of Class "A" Portland Cement concrete as specified in Section 90, "Portland Cement Concrete" of the Standard Specifications, and shall conform to the provisions of Section 90-10, "Minor Concrete," of the Standard Specifications.
 - ii. Adhesives: Adhesives or bonding agents used to join new concrete to existing concrete shall be approved by the Engineer prior to use in the work.
 - iii. Lampblack: Lampblack of approved quality shall be mixed with all concrete used in the work at the rate of one pound per cubic yard of concrete. (If Concrete is not colored)
 - iv. Joint Filler: Premolded expansion joint filler shall conform to the provisions of Section 51-1.12C of the Standard Specifications.
 - v. Dowels: Steel dowels, where specified, shall conform to the provisions of Section 51.1.13 and 52.1.02A of the Standard Specifications.

- vi. Curing: The curing method of Portland Cement concrete shall conform to Section 90-7.01B of the Standard Specifications. The curing compound shall consist of the compound specified in Section 90-7.01B (4) of the Standard Specifications.

M. UNDERGROUND FACILITIES

NOTICE IS HEREBY GIVEN THAT there may be underground water, electric, irrigation and other utility pipes located beneath the surface of the roadway.

Prior to submittal of bids, and upon obtaining appropriate encroachment permits, prospective bidders may, at their expense, investigate the nature of the site by digging test holes within public right-of-way areas in the vicinity of the work.

The Contractor shall contact the appropriate utility company prior to any excavation and shall determine the exact vertical and horizontal location of any underground facilities.

Following the award of contract for the work, any cost in locating underground facilities shall be considered as included in the cost of other items of the contract and no additional compensation will be allowed.

Section 19-1.04, "Removal and Disposal of Buried Man-Made Objects", of the Standard Specifications shall not apply. Payment for removal and disposal of buried man-made objects shall be included in the contract price paid for other items of work and no separate payment shall be allowed.

IV. TECHNICAL SPECIFICATIONS

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RIVERBEND PARK RENOVATION PH 2 AMPHITHEATER
TECHNICAL SPECIFICATIONS

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SECTION 01230
ALTERNATIVES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Alternative submission procedures.
- B. Documentation of changes to Contract Sum and Contract Time.

1.02 RELATED SECTIONS

- A. Instructions to Bidders: Instructions for preparation of pricing for alternatives.
- B. Alternatives: List of alternatives as supplement to Bid Form.
- C. Construction Agreement: Incorporating monetary value of accepted alternatives.

1.03 ACCEPTANCE OF ALTERNATIVES

- A. Alternatives quoted on Bid Forms will be reviewed and accepted or rejected at District's option. Accepted alternatives will be identified in the Owner-Contractor Agreement.
- B. The City has the option of accepting none, or any number and combination of Bid Alternatives.
- C. Coordinate related work and modify surrounding work to integrate the Work of each alternative.

1.04 SCHEDULE OF ADDITIVE ALTERNATIVES

- A. See Bid/Proposal Form.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 01300
ADMINISTRATIVE REQUIREMENTS
PRECONSTRUCTION MEETING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preconstruction meeting.

1.02 RELATED SECTIONS

- A. Document General Conditions.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

- A. Feather River Recreation and Park District will schedule a meeting after Notice of Award.
- B. Attendance Required:
 - 1. Feather River Recreation and Park District.
 - 2. Melton Design Group
 - 3. Construction Management Firm
 - 4. General Contractor
 - 5. Electrical Contractor
- C. Agenda
 - 1. Execution -Contractor Agreement.
 - 2. Submission of executed bonds and insurance certificates.
 - 3. Distribution of Contract Documents.
 - 4. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
 - 5. Designation of personnel representing the parties to Contract, Owner, Contractor, Construction Management Firm, and Landscape Architect.
 - 6. Procedures and processing of field decisions, submittals, and substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 - 7. Critical Path Scheduling.
 - 8. Scheduling activities for soils testing, and pot holing and or USA to locate unmarked utilities.
- D. Owner will record minutes and distribute copies after meeting to participants.

END OF SECTION

SECTION 01400

QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Control of installation
- B. Testing and inspection services.

1.02 RELATED SECTIONS

- A. General Conditions: Submittals, inspections and approvals required by public authorities.
- B. Section 01780 Contract Closeout
- C. Individual Specifications Section: Submittals, inspection and testing required, and standards for testing.

1.03 REFERENCES

- A. City of Oroville Department of Public Works Standard Plans.
- B. Title 24, California Building Code, current edition.
- C. ASTM C 1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation; 1998.

1.04 TESTING AND INSPECTION AGENCIES

- A. Contractor shall employ and pay for services of an independent testing agency to perform specified testing. Contractor pays for retesting.
- B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
- C. Contractor Employed Agency:
 - 1. Testing Equipment: Calibrated at reasonable intervals with devices of accuracy traceable to either National Bureau of Standards or accepted values of natural physical constants.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step-in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Melton Design Group before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 TESTING AND INSPECTION

- A. Testing Agency Duties:
 - 1. Provide qualified personnel at site. Cooperate with District's Representative, Landscape Architect and Contractor in performance of services.
 - 2. Perform specified sampling and testing of products in accordance with specified standards.
 - 3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 4. Promptly notify District's Representative, Landscape Architect and Contractor of observed irregularities or non-conformance of Work or products.
 - 5. Perform additional tests and inspections required by Architects.
 - 6. Submit reports of all tests/inspections specified.
- B. Limits on Testing/Inspection Agency Authority:
 - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - 2. Agency may not approve or accept any portion of the Work.
 - 3. Agency may not assume any duties of Contractor.
 - 4. Agency has no authority to stop the Work.
- C. Contractor Responsibilities:
 - 1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
 - 2. Cooperate with laboratory personnel and provide access to the Work and to manufacturers' facilities.

3. Provide incidental labor and facilities:
 - a. To provide access to Work to be tested/inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
 - c. To facilitate tests/inspections.
 - d. To provide storage and curing of test samples.
 4. Notify District's Representative, Landscape Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
 6. Arrange with District's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- D. Re-testing required because of non-conformance to specified requirements shall be the same agency on instructions by Landscape Architect. Payment for retesting will be charged to the Contractor by deducting testing charges from the Contract Price.

3.03 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not conforming to specified requirements.
- B. If, in the opinion of the District's Representative or Landscape Architect, it is not practical to remove and replace the Work, the Landscape Architect will direct an appropriate remedy and/or adjust payment.

END OF SECTION

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary utilities.
- B. Temporary telephone service.
- C. Temporary sanitary facilities.
- D. Temporary Controls: Barriers and fencing.
- E. Security requirements.
- F. Waste removal facilities and services.
- G. Project identification sign.
- H. Dust control.
- I. Erosion control
- J. Existing Conditions verification.

1.02 RELATED SECTIONS

- A. Section 01510 - Temporary Utilities.
- B. Section 01550 - Vehicular Access and Parking.

1.03 TEMPORARY UTILITIES - See Section 01510

1.04 TELEPHONE SERVICE

- A. Provide, maintain, and pay for telephone service (cellular OK) at site during hours of construction.

1.05 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain portable construction toilet facilities for Contractor's employees and Construction Manager.
 - 1. Toilet Facilities: Provide enough suitably enclosed toilets with urinal for use by all craft 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 clean and sanitary condition.

1.06 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition. **THE PARK SHALL BE OPEN TO THE PUBLIC DURING CONSTRUCTION.**

- 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.

1.07 FENCING

- A. Temporary fencing as indicated in the special provisions.

1.08 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.
- B. Contractor may wish to provide a security force at his expense. The Owner will not provide any monitoring for security reasons.

1.09 VEHICULAR ACCESS AND PARKING -See Section 01550

- 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 park facilities for public and the Owner, as designated in the plans and free of obstructions.
- C. Provide means of removing mud from vehicle wheels before entering streets. See erosion control plan.
- D. Provide temporary parking areas to accommodate construction personnel in contractor staging area.

1.10 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.

1.11 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 of design and constructed of such material as shall be directed by the owner and Melton Design Group and must last the duration of the Project. Sign to read: Riverbend Park Renovation Ph 2 Amphitheater, City of Oroville, California, date-to date of construction, construction company name and contact phone number, the District name and contact phone number, and the Landscape Architect name and contact information. Design approval of the sign by Landscape Architect and 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.

1.13 DUST CONTROL

- A. Use water wagons or spray from hoses to control dust created by work operations. Comply with all local and state dust control ordinances.

1.14 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. As part of the NPDES, A Storm Water Pollution Prevention Plan (SWPPP) must be developed for the project if area to be disturbed is one (1) acre or larger. The contractor shall complete the SWPPP and update it as necessary throughout construction of the project.
- C. 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.
- D. 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.

1.15 EXISTING CONDITIONS VERIFICATION

- A. Contractor shall review existing site conditions to verify conditions shown on construction drawings and notify owner of any discrepancies prior to start of construction.

1.16 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove utilities, equipment, facilities, and materials prior to Final Application for Payment inspection.
- B. Remove underground installations to a minimum depth of two (2) feet.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. 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 of Service and Use: By Contractor.
- B. Provide temporary electric feeder from existing power pole electrical service at location as directed.
- C. Provide separate metering for service
- D. Complement existing power service capacity and characteristics as required.
- E. Provide power outlets for construction operations, with branch wiring and distribution boxes located as required. Provide flexible power cords as required.
- F. Provide main service disconnect and over-current protection at convenient location and meter.
- G. Permanent convenience receptacles may be utilized during construction.
- H. Provide adequate distribution equipment, wiring, and outlets to provide single-phase branch circuits for power and lighting.

1.04 TEMPORARY WATER SERVICE

- A. Cost of Water Used: By Contractor. Contractor to pay for water used for on-site work.
- B. Provide and maintain suitable quality water service for construction operations at time of project mobilization.
- C. 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.

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 roads 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 District's other rights and remedies, suspend work as specified in Article 13 of 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 District 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
 - b. Department of Fish and Wildlife Streambed Alteration Agreement
 - 1) 1600 Permit

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 District).
 - a. The Storm Water Pollution Prevention Plan (SWPPP) shall be submitted for disturbed areas one (1) acre or greater 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 District 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.

2. 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.
3. 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.
4. Petroleum products shall be stored in nonleaking containers at impervious storage sites from which runoff is not permitted to escape.
5. 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.
6. 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.
7. 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 boundary 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 county 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 District.
- 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 Engineer will be notified prior to proceeding with the work affected. If necessary, the Engineer will suspend work as specified in Article 13 of the General Conditions. The Engineer 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. Flocculants 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 source.
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. Stockpiles shall be protected from erosion either by covering them or by placing barriers (e.g. silt fence, sandbags) 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 firefighting 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 firefighting 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, firefighting 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 District 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

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.

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. Shop Drawing Submittals: Prepared specifically for this Project.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.
- D. 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 manufacturers 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; obtain receipt prior to final payment.

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 District.
 - 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 District 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 plants. 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 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 District's Representative, Melton Design Group 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 Substantial Completion Inspection. Melton Design Group 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 final inspection.
 - 3. Submit 1 copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Melton Design Group 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 District'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 District.
- 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 clearly 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 District's operating staff in proper care and operation of equipment, systems and controls.
- B. Submit three copies of certificate, signed by District'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 District'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 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.
 - 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.

- A. 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

- A. Visit the site and examine the existing conditions and observe the conditions under which the Work is to be performed. Notify the Landscape Architect of unsatisfactory conditions and do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to the Landscape Architect. 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 District at no additional cost to District.

- 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 the demolition plans. Some existing trees are designated to be pruned per Drawings. Contact District Representative prior to pruning for pre-pruning direction. Prune sample tree after direction and obtain approval from the District prior to pruning remainder of trees.

1.05 CUTTING AND PATCHING

- A. 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

- A. 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

- A. 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 Landscape Architect.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Notification
 - 1. Notify the Landscape Architect 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 1-800-642-2444 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 Landscape Architect 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.

E. Avoid interference with the use of, and passage to and from, adjacent properties.

F. Conduct operations so as not to interfere with the use of adjacent roads, streets, drives, walks, service lines, etc.

G. Disconnection of Utilities

1. 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.

H. Protection of Utilities

1. 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.

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 Landscape Architect, 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 insure 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 (1 -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 (1 2) 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.

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 02200
SITE PREPARATION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Site preparation work, as follows:
 - 1. Locating existing facilities.
 - 2. Installing safety and protective barriers.
 - 3. Constructing temporary access roads, work areas and storage areas.
 - 4. Clearing, grubbing, stripping, and other initial work required for earthwork and trenching operations.

1.02 REFERENCED SECTIONS

- A. The following Section is referenced in this Section
 - 1. Section 01300 – Administrative Requirements
 - 2. Section 02260 – Landscape Grading
 - 3. Section 02905 – Landscape Installation

1.03 DEFINITIONS

- A. Clearing: Consists of removal of natural obstructions and man-made objects and features including foundations, buildings, fences, lumber, stumps, debris, rubbish, brush, trees, boulders, and other items that interfere with construction operations or are specifically designated for removal.
- B. Stripping: Includes the removal and disposal of sod, grass, weeds, roots, and other organic material remaining after clearing has been completed.
- C. Topsoil: The native or cultivated surface-soil layer containing organic matter and typically consisting of a darker shade of brown, grey or red than the underlying subsoil.

1.04 SUBMITTALS

- A. Prepare and submit in accordance with Section 01330.
- B. Submit:
 - 1. Materials used and layout of temporary fences
 - 2. Proposed staging and stockpile locations.

PART 2 - PRODUCTS

2.01 TEMPORARY FENCES

- A. Type: Heavyweight, high visibility, flat laminar mesh design.
- B. Material: High-density polyethylene.
- C. Height: 48 inches.

- D. Posts: Wood or metal posts at 10-foot spacing. Secure fence to posts with plastic cable ties.

PART 3 - EXECUTION

3.01 LOCATING EXISTING FACILITIES

- A. Review the design drawings, maps, and other sources of information and identify existing facilities at the site to determine and mark the approximate locations of underground facilities.
- B. Follow rules adopted by the Underground Service Alert (USA) regarding locating and marking existing buried utilities and contact owners of existing underground utilities prior to beginning work in the vicinity of their utilities.

3.02 SAFETY AND PROTECTIVE BARRIERS

- A. Along Public Roadways:
 - 1. Install appropriate barriers such as temporary fencing, plastic drums, or concrete traffic barriers to protect public from construction areas and to protect workers and existing facilities from danger of passing vehicles.
- B. Temporary Fences:
 - 1. Prior to beginning excavation, erect temporary fences as indicated on the Drawings.
 - 2. Maintain work activities within the confines of the temporary fences.
 - 3. Remove temporary fences when work in the vicinity is substantially complete.
- C. Existing Trees: Erect temporary fences around trees that are to remain at the drip line that are adjacent to the Work and may be subject to damage unless protected. Maintain work activities outside of protected areas.
- D. Provide protective concrete slabs, steel plates or encasements for existing buried facilities that may be damaged by Contractor's equipment and vehicles.

3.03 PRIMARY SITE ACCESS, WORK AND STORAGE AREAS

- A. Develop primary access routes, work areas and storage areas as needed.
- B. Clean up areas at the conclusion of the project and return the areas to their original or better condition.

3.04 CLEARING

- A. Clear construction areas of objectionable items and material, which, if left in place, would interfere with the proper performance of the work.
- B. Remove loose boulders within 10 feet from the tops of cut slopes. Incorporate boulders into landscaping or remove from the site.
- C. Dispose of material from clearing operations in an acceptable off-site location.

3.05 STRIPPING

- A. Remove the top layer of soil containing sod, grass, weeds and other vegetation to a depth of 2 inches from areas that will be affected by construction and site grading operations.

- B. Extend stripped areas at least 4 feet beyond the limits of cut and fill areas.
- C. Remove sludge-entrained soils from the areas indicated on the Drawings.

3.06 REMOVAL OF EROSION CONTROL DEVICES

- A. Remove erosion control devices when bare soils are sufficiently revegetated to prevent on-site or off-site soil erosion.

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 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 District'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 02905 - LANDSCAPE INSTALLATION

1.03 DEFINITIONS

- A. Finish grade: Finish grade: Finish grade shall mean the establishment of grades to .04 feet plus or minus.
- B. Grading intent: Spot elevations (grades) and contours are indicated based on the best available data. Construction Drawings are referenced to provide site grading data. The intent is to maintain constant slopes between spot elevations.
 - 1. If a spot elevation is determined to be in error, or the difference in elevation between points change contact the Landscape Architect 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. Pothole 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 benchmarks, pavement, utility lines. In the event of damage or loss immediately make all repairs and replacements required to the District's approval at no additional cost to the District.

1.07 QUALITY ASSURANCE

- A. Finish grade shall conform to contours, grades, lines and shapes, as indicated on Architect'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 Construction Drawings.

1.08 SUBMITTALS

- A. Provide one (1) cubic foot sample of import topsoil material for the District's approval prior to delivery to the site, but in any case, prior to placement.
- B. Provide horticultural soils report of submitted topsoil including information on soil texture, filtration rate, nutrient levels and organic matter. Include recommendation for amendment to be added to topsoil to mitigate any deficiencies.

PART 2 - PRODUCTS

2.01 ONSITE MATERIAL

- A. Existing onsite excavated surplus material may be acceptable fill or topsoil material, if approved by the District'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 topsoil. Excavated surplus material not required for fill material or topsoil 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 District.
- E. Topsoil shall be stock piled on site in an area free of rock and other deleterious materials. District reserves the right to reject topsoil once placed in proper location refer to per Part 3 - Execution 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 18".
- B. Rip and cross rip to a depth of 12 inches all areas exposed by engineering cut operations. Remove all rock two inches or larger within 6 inches of finish grades in all non-hydro mulch planted areas.
- C. Rip and cross rip to a depth of 12 inches all turf areas prior to the placement of import topsoil.
- D. Parking lot islands to be ripped and cross ripped to 30" depth and left in place per plan.

3.03 TOPSOIL PLACEMENT

- A. Place topsoil to contours indicated on plans to create landscape grade.
- 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 Architect'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 rounding at abrupt changes in slope.
- C. Shrub/ground cover planting areas shall be graded two and one-half (2-1/2) inches below adjacent paved areas, sidewalks, valve boxes, headers, drains, etc. in order to receive two (2) inch depth of decomposed granite or cobble, 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 02905 - 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 (2-1/2) inches below adjacent paved areas, sidewalks, valve boxes, headers, drains, etc. in order to receive two (2) inch depth of mulch, establishing final grade one-half (1/2) inches below these surfaces
 - 1. When parking lot islands are impacted with tree roots, grade 12" from back of curb two and one quarter (2-1/4) inches below adjacent paved areas, sidewalks, curbs, mow curbs, etc. and gradually slope grade to tree crown in order to receive 2" in depth of decomposed granite at hardscape and a minimum of 1" at the tree root crown.

END OF SECTION

SECTION 02300

EARTHWORK

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Earthwork requirements for site work, structures, roads and general earthwork, including excavation, fill, backfill, grading, and compaction; import of material; and disposal of surplus and unsuitable materials.
- B. Refer to Section 02320 for earthwork related to pipeline installation.

1.02 REFERENCED SECTIONS

- A. The following Sections are referenced in this Section
 - 1. Section 01600 – Product Requirements
 - 2. Section 01330 – Submittals
 - 3. Section 02200 – Site Preparation
 - 4. Section 02260 – Excavation Support and Protection
 - 5. Section 02320 – Trenching

1.03 DEFINITIONS

- A. Backfill: Earthwork necessary to add fill between new structures and the excavation up to the sub or finish grade.
- B. Borrow Area: Area identified from which to obtain earthwork materials.
- C. Cut: Earthwork necessary to remove existing material to lower the existing grade in elevation to sub or finish grade.
- D. Embankment: Materials placed to form the subgrade for roadways or site improvements.
- E. Excavation: Earthwork necessary to remove existing material for the installation of structures.
- F. Fill: Earthwork necessary to add material to bring the existing grade up in elevation to sub or finish grade.
- G. Finish Grade: Final surface following placement of surfacing, if any, as indicated.
- H. Subgrade: The surface of the earthwork on which pavement, surfacing, base, sub base, or a layer of any other material is placed.

1.04 SUBMITTALS

- A. Prepare submittals and submit in accordance with Section 01330.
- B. For imported materials, provide certification and source.
- C. For excavations 5 feet or deeper: Submit detailed plan of all shoring, bracing, side sloping, or other provisions for worker protection against the hazard of caving ground during excavations in accordance with Section 02260.

1.05 QUALITY ASSURANCE

- A. Materials and Compaction Testing.
 - 1. Source testing of materials: Provided and paid for by Contractor.
 - 2. Field testing of compaction: Provided and paid for by Contractor.
- B. Compaction Testing Standards
 - 1. In-place Density of Compacted Fill Material: Density determined in the field in accordance with ASTM D2922 – Test Methods for Density of Soil and Soil Aggregate by Nuclear Methods (shallow depth).
 - 2. Maximum Density of Compacted Material: determined in the laboratory in accordance with Method C of ASTM D 1557 – Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 10 lb Rammer and 18” Drop, for cohesive soils, or ASTM D 4253 Test Methods for Maximum Index Density of Soils Using a Vibratory Table and D 4254 - Test Methods for Maximum Index Density of Soils and Calculation of Relative Density, for cohesion less, free draining soils.
- C. Material Testing Standards:
 - 1. Particle size analysis of soils and aggregates: ASTM D 422 – Method for Particle-Size Analysis of Soils.
 - 2. Determination of sand equivalent value: ASTM D 2419 – Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
 - 3. Liquid limit, plastic limit, and plasticity index: ASTM D4318 – Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
 - 4. The testing for organic matter: ASTM D2974 – Standard Test methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils.
- D. References in this section to soil classification types and standards shall have the meanings and definitions indicated in ASTM D 2487 – Classification of Soils for Engineering Purposes. Contractor shall be bound by all applicable provisions of ASTM D 2487 in the interpretation of soil classifications.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General fill, backfill, and embankment materials:
 - 1. Selected or processed clean earth, rock, or sand, free from grass, roots, brush, other vegetation, corrosive and hazardous materials, manmade objects, debris and particles greater than 6-inches in maximum dimension.
 - 2. Materials not defined as unsuitable as indicated below, except when acceptable to the Engineer, when thoroughly mixed with suitable materials to form a stable composite.
 - 3. Obtain suitable materials from one or more of the following:
 - 4. Onsite excavations and designated borrow areas.
 - 5. Processed on-site materials.
 - 6. Imported from offsite borrow areas and processing plants.
- B. Aggregate Base Course Material:
 - 1. Conforming to all requirements of State Standard Specifications Section 26-1.02B Class 2 Aggregate Base.

2. Conforming to the aggregate grading requirements of ¾ inch maximum.

C. Crushed Rock:

1. Manufactured, angular, crushed stone with a minimum sand equivalent value of 75.
2. Clean, hard, sound, durable, uniform in quality, and free of soft, friable, thin, elongated or laminated pieces, and disintegrated material.
3. Have 100 percent of its particles with at least one fractured face on a weight basis, when tested for crushed particles per ASTM D 5821.
4. Complying with the grading shown in the following table:

Sieve Size	Percentage Passing		
	1-inch	¾-inch	½-inch
1-1/2-inch	100	-	-
1-inch	90-100	100	-
¾-inch	30-60	90-100	100
1/2-inch	0-20	30-60	90-100
3/8-inch	-	0-20	20-60
No. 4	0-5	0-5	0-15
No. 8	-		0-5

D. Sand:

1. Clean, coarse, natural sand free from organic material, suitable for the purpose intended.
2. Gradation: 90 percent to 100 percent will pass a No. 4 sieve and not more than 5 percent will pass a No. 200 sieve.

2.02 UNSUITABLE MATERIALS

A. Unsuitable materials include the materials listed below:

1. Soils which, when classified under ASTM D 2487, fall in the classifications of Pt, OH, CH, MH, or OL, or in a classification that contains Pt, OH, CH, MH, or OL in combination with any other letter designation, such as CH/CL.
2. Soils which cannot be compacted sufficiently to achieve the density specified for the intended use or are unstable or pump regardless of the degree of compaction.
3. Materials that contain hazardous or designated waste materials including petroleum hydrocarbons, pesticides, heavy metals, and any material which may be classified as hazardous or toxic according to applicable regulations.
4. Soils that contain greater concentrations of chloride or sulfate ions, or have a soil resistivity or pH less than the average values for existing onsite soils.
5. Topsoil, sludge and sludge-entrained soils.
6. Rocks, stones, and boulders larger than allowed for use as fill and backfill materials.

2.03 SOURCE QUALITY CONTROL

- A. Materials source testing will be performed by a testing laboratory of the District's choice at the District's expense except as indicated below.

- B. Minimum Frequency of sampling:
 - 1. Fill, backfill and embankment material generated from earthwork activities:
 - 2. Two soil samples every 500 cubic yard of material used.
 - 3. Two soil samples whenever the character of the soil changes.
 - 4. One soil sample when directed by the Engineer.
 - 5. Obtain samples that represent the predominate character of the soil that is encountered.
 - 6. Sampling of Imported Material
 - 7. Obtain representative samples of product from supplier.
 - 8. After initial testing demonstrated that the proposed borrow material meets the specified requirements, obtain and test one additional sample for every 500 cubic yard of imported material.
- C. Testing:
 - 1. Test all materials used in the Work to confirm they meet the requirements indicated.
 - 2. Prepare moisture-density curves for use in determining the optimum moisture content and in-place density of the compacted backfill.

PART 3 - EXECUTION

3.01 EXCAVATION – GENERAL

- A. Excavation includes the removal of all materials of whatever nature encountered, including all obstructions of any nature.
- B. Excavation shall conform to the lines and grades indicated on the Drawings.
- C. Clear, grub and strip and remove topsoil in construction and borrow areas in accordance with Section 02200.
- D. Excavation Stability
 - 1. Slope excavated faces or otherwise support in a safe manner in accordance with applicable State safety requirements and the requirements of OSHA Safety and Health Standards for Construction (29CFR1926) and in accordance with Section 02260.
 - 2. Furnish, place, and maintain supports and shoring required to maintain stability of the sides of excavations.
- E. Notify Engineer at least 1 working day in advance of completion of any structure excavation to allow inspection of the exposed subgrade before it is covered with backfill or with any construction materials.
- F. Erosion Control:
 - 1. Maintain earthwork surfaces true and smooth and protected from erosion.
 - 2. Construct erosion control measures identified in the Storm Water Pollution Protection Plan prior to any clearing or grading activity.
- G. Control of Water: Control and prevent water entering the excavation or fill areas.
- H. Existing Underground Utilities:
 - 1. Known existing underground utilities are generally shown on the Drawings in their approximate locations based on information of varying accuracy.

2. Exercise care to avoid damage to all existing utilities whether shown or not.
 3. Conduct field explorations to locate all underground utilities in the vicinity of the Earthwork activities in accordance with Section 02200.
 4. Alert the Engineer of the presence of existing utilities that are not shown on the Drawings or are in locations different than those shown on the Drawings.
- I. Existing Overhead Utilities: There may be existing overhead utilities in the vicinity of the Work which may or may not be shown on the Drawings. Identify existing overhead utilities, if any, and use extreme caution when working in the vicinity of overhead utilities.

3.02 EXCAVATION FOR FILLS AND EMBANKMENTS

A. Benching and Keyways:

1. Where fill is to be placed against existing subgrade or existing grade that is sloped, excavate horizontal benches a minimum of 5 feet wide and located at vertical intervals of not more than 5 feet to provide for placement and compaction of the new fill on horizontal surfaces.
2. Excavate keyway along the base of the existing slope:
3. Extend the keyway at least 3 feet into competent native soil.
4. Width of Keyway: Minimum of 15 feet.
5. Keyway Side Slopes: Inclined at approximately 0.75:1.
6. Keyway Subgrade: Scarify the upper 8-inches of the exposed surface, moisture condition and re-compact.

B. Subgrade Preparation:

1. Subgrade Beneath Embankments:
2. Expose competent native soil within the planned new embankment footprint.
3. Scarify the exposed subgrade to a depth of 8 inches, moisture condition as necessary and re-compact.
4. Subgrade Beneath Paved Areas:
5. Excavate to the subgrade soils beneath the bottom of the aggregate base or to the subbase, if such sub base is indicated.
6. Scarify the top 6 inches of subgrade soils, moisture condition as necessary, and re-compacted.
7. Finished subgrade shall be even, self-draining, and in conformance with the slope of the finished pavement.
8. Subgrade Beneath Structures:
9. Excavate to the subgrade soils beneath the bottom of the structure or bottom of crushed rock layer where indicated.
10. Scarify the top 6 inches of subgrade soils, moisture condition as necessary, and re-compacted.

3.03 OVER-EXCAVATION NOT ORDERED OR INDICATED

- A. Backfill areas over-excavated with the materials indicated for the backfill above the over-excavation or Aggregate Base.
- B. Backfill the over-excavation to restore the required subgrade elevation and compact.
- C. Any over-excavation carried below the grade indicated on the Drawings will be at no additional cost to District.

3.04 OVER-EXCAVATION WHERE ORDERED BY ENGINEER

- A. Where ordered by the Engineer, over-excavate beyond the depth of subgrade indicated to the dimensions ordered.
- B. Backfill areas over-excavated with the materials indicated for the backfill above the over-excavation or Aggregate Base.
- C. Backfill the over-excavation to restore the required subgrade elevation.
- D. Over-excavation less than 6 inches below the limits indicated: At no increase in cost to District.

3.05 DISPOSAL OF UNSUITABLE, EXCESS EXCAVATED AND OTHER MATERIALS

- A. Dispose unsuitable or excess excavated materials at an appropriate site selected by Owner unless otherwise indicated.
- B. Obtain required permits, landowner, and agency approvals for disposal of unsuitable and excess excavated materials and pay costs associated with the removal and disposal of the materials.

3.06 FILL AND EMBANKMENT CONSTRUCTION

- A. Scarify foundation soils for fills and embankments bring to optimum moisture content, and re-compact with heavy compaction equipment to obtain compaction indicated.
- B. Place and compact fill and embankments in horizontal layers so that when compacted layers to not exceed thickness indicated.
- C. Provide keyways or benches where an embankment or fill is to be placed against slopes, hillsides, or fill slopes.
- D. Slopes: Construct slopes as indicated except construct no permanent fill or embankment slopes with slope inclinations that exceed 2:1 (horizontal:vertical) unless specifically indicated otherwise
- E. Over-construct fills and embankments to greater horizontal dimensions than indicated. Cut back slope following placement and compaction to expose well compacted fill.
- F. Construct the first 3 feet of embankment or fills over pipelines using placement and compaction equipment that do not damage the pipe. Keep heavy construction equipment a minimum distance of the edge of the trench equal to the depth of the trench until at least 3 feet of fill over the pipe has been completed.

3.07 AGGREGATE BASE

- A. Moisture condition spread and compact aggregate base course material to the lines, grades and dimensions indicated on the Drawings and in accordance with applicable sections of State Standard Specifications Section 26.

3.08 COMPACTION OF FILL, BACKFILL, AND EMBANKMENT MATERIALS

- A. Adjust moisture condition of soils to achieve a water content of 3 percent, plus or minus 0.5 percent, above the optimum moisture content as determined through laboratory testing of the soil.
- B. Compact each layer in a uniform and systematic manner.

- C. For materials with less than 10 percent passing the No. 4 sieve, compact by means of at least 2 passes from a flat plate vibratory compactor.
- D. For materials with 10 percent or more passing the No. 4 sieve, mechanically compact to the indicated percentage of density each layer of backfill materials.
 - 1. Use equipment that is consistently capable of achieving the required degree of compaction.
 - 2. Compact each layer over its entire area while the material is at the required moisture content.
- E. Do not use flooding, ponding, or jetting as a method of compaction.
- F. Do not use equipment weighing more than 10,000 lbs closer to structure walls than a horizontal distance equal to the depth of the fill at the time. Use hand operated power compaction equipment where use of heavier equipment is impractical or restricted due to weight limitations.
- G. Compaction Requirements:
 - 1. Where agency or utility company requirements govern, the highest compaction standards shall apply.
 - 2. Compact finish and subgrades in compliance with the following table:

Location or Use of Fill	Limit/Layer Thickness	Percentage of Maximum Density of Compacted Material
Aggregate Base	6 in. Layers	95
Embankment Fill	12 in. Layers	90
Subgrade beneath embankments or fill areas (upper 8 inches)	Upper 12 in.	95
Subgrade beneath paved areas (upper 6 inches)	Upper 6 in.	95
Subgrade beneath structures (upper 6 inches)	Upper 6 in.	95
Subgrade beneath keyway (upper 8 inches)	Upper 8 in.	95
Finish grade in unimproved or landscape areas	Upper 12 in.	85

3.09 FIELD QUALITY CONTROL AND TESTING

- A. Field quality control testing for compaction confirmation will be done by a testing laboratory of the District's choice at the District's expense except as indicated below.
- B. If requested by the District, remove soil above the level at which the District wishes to test. Backfill and re-compact material after testing is completed.
- C. If compaction fails to meet specified requirements, perform remedial work by one of the following methods:
 - 1. Remove and replace backfill at proper density.
 - 2. Bring density up to specified level by other means acceptable to District.
 - 3. Retesting:
 - 4. Costs for conducting additional tests to confirm and verify that remedial work has brought compaction within specified requirements shall be borne by the Contractor.

5. Conduct compaction tests at twice as frequently specified for the initial confirmation tests.
- D. Where soil compaction is specified as a percentage of maximum density, determine the maximum density at optimum moisture content by laboratory testing in accordance with Method C of ASTM D 1557.
- E. Where compaction of cohesionless, free draining soil is specified as a percentage of relative density, determine relative density by laboratory testing in accordance with ASTM D 4253 and D 4254.
- F. Determine In-Place Density of Compacted Fill Material by performing field tests of soil density in accordance with ASTM D 2922.
- G. Frequency of Compaction Confirmation Testing at intervals not less than as follows:
 1. Embankments and Fills: 2 tests every 500 cubic yards.
 2. Structure Backfill: 1 test every 5 feet in elevation per 100 horizontal feet of backfill.

3.10 FINISH GRADES

- A. Surface: Reasonably smooth and free of grade breaks, irregular surface changes, protrusions and other defects.
- B. Restore un-improved areas back to pre-construction grades.
- C. Backfill topsoil in all areas where the topsoil was removed as part of the site preparation.
- D. Restore drainage swales and water courses to their pre-construction alignments and grades unless otherwise modified by the Work. Grade surface to drain away from structures. Direct drainage to collection points.
- E. Provide smooth transitions to existing grades.
- F. Repair and reestablish grades to required elevations and slopes due to any settlement or erosion that may occur prior to final acceptance.
- G. Vertical Tolerance:
 1. Subgrade under paved areas: 0.1 feet above and 0.1 feet below.
 2. Landscaped areas: 0.1 feet above and 0.1 feet below.
 3. Unimproved areas: 0.1 feet above and 0.1 feet below.

END OF SECTION

SECTION 02316

FILL AND BACKFILL – SITE CONCRETE

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 Construction Procedures and Details: Air and Water Pollution Control and Dust Control
- B. Section 02260 – Landscape Grading
- C. Section 02515 – Site Concrete
- D. Section 02811 – Irrigation: Trenching and Backfill

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 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 District Engineer observe all areas to receive engineered fill and subgrade surfaces prior to implementation of remedial measures.
 - 1. Upon approval of the District Engineer, 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 District Engineer upon observation of the unstable soil conditions.
 - 2. Upon approval of the District Engineer, 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 District Engineer 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 District Engineer 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 District Engineer 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. Recompect between 88 and 92 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. Recompect 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 6 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 88 and 92 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 Section 02811 Irrigation Specifications

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 uncompacted material in accordance with ASTM D 1557 ("modified Proctor").

END OF SECTION

SECTION 02320

TRENCHING

PART 1 - GENERAL

1.01 SECTION INCLUDES

1. Trench excavation and backfilling for pipe and pipeline appurtenances.
2. Minor structure excavation and backfill associated with pipeline construction.

1.02 REFERENCED SECTIONS

- A. The following Sections are referenced in this Section
 1. Section 01600 – Product Requirements
 2. Section 01330 - Submittals
 3. Section 02200 – Site Preparation

1.03 DEFINITIONS

- A. Backfill: Earthwork necessary to provide fill between new structures and excavation up to the sub or finish grade.
- B. Bedding Zone: The area from the trench subgrade to the bottom of the pipe.
- C. Embedment or Pipe Zone: The area from the top of the Bedding Zone to the bottom of the Trench Zone as indicated on the Drawings.
- D. Excavation: Earthwork necessary to remove existing material for the installation of structures.
- E. Finish Grade: Final surface following placement of surfacing, if any, as indicated.
- F. Native Material: Naturally occurring soils excavated from the trench after topsoil, if any, has been removed.
- G. Open Areas: Areas along the pipeline route that are outside Roadway Shoulders or in open pasture.
- H. Pavement Section: The upper portion of the trench within paved areas comprising the base and finished surface materials.
- I. Roadway Shoulders: Paved areas and unpaved areas outside the traveled way and extending to the outside edge of any roadside drainage features.
- J. Spoils: Unsuitable or excess excavated materials.
- K. Subgrade: The surface of the earthwork on which bedding, base materials, pavement, other surfacing materials, or structure bases are placed.
- L. Traveled Way: The portion of the roadway where vehicles travel, does not include shoulders.

- M. Trench Backfill: Materials used to backfill the trench including bedding zone, pipe zone, and trench zone backfill.
- N. Trench Zone: The area from the top of the Pipe Zone to the bottom of the pavement base (subgrade), ground surface or other surface material over the trench excavation.
- O. Wet Trench: Trench with water or groundwater present in the trench.

1.04 SUBMITTALS

- A. Prepare submittals and submit in accordance with Section 01600.
- B. Material Data: Submit the following for each material type imported to the site:
 - 1. Material source.
 - 2. Gradation.
 - 3. Moisture-density curves.
 - 4. Permeability tests (for clay material).
- C. All material submittals must be dated to less than 1 year prior to Notice-to-proceed.
- D. For excavations 5 feet or deeper, submit detailed plan of all shoring, bracing, side sloping, or other provisions for worker protection against the hazard of caving ground during excavations in accordance with Section 02260.
- E. Submit name and qualifications of materials testing lab for Contractor furnished testing.

1.05 QUALITY ASSURANCE

- A. Materials and compaction testing
 - 1. Source Testing of Materials: Provided and paid for by Contractor.
 - 2. Field Testing of Compaction: Provided and paid for by Contractor.
 - 3. Testing shall be performed by a qualified testing laboratory approved by the District. Submit testing laboratory qualifications for approval.
- B. Compaction Testing:
 - 1. In-place Density of Compacted Fill Material: Density determined in the field in accordance with ASTM D2922 – Test Methods for Density of Soil and Soil Aggregate by Nuclear Methods (shallow depth).
 - 2. Maximum Density of Compacted Material: determined in the laboratory in accordance with Method C of ASTM D 1557 – Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 10 lb Rammer and 18” Drop, for cohesive soils, or ASTM D 4253 – Test Methods for Maximum Index Density of Soils Using a Vibratory Table and D 4254 – Test Methods for Maximum Index Density of Soils and Calculation of Relative Density, for cohesionless, free draining soils.
- C. Materials Testing Standards:
 - 1. Particle size analysis of soils and aggregates: ASTM D 422 – Method for Particle-Size Analysis of Soils.

2. Determination of sand equivalent value: ASTM D 2419 – Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
3. Liquid limit, plastic limit, and plasticity index: ASTM D4318 – Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
4. Testing for organic matter: ASTM D2974 – Standard Test methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils.
5. Testing for percentage of fractured particles: ASTM D 5821.
6. References in this section to soil classification types and standards shall have the meanings and definitions indicated in ASTM D 2487 – Classification of Soils for Engineering Purposes. Contractor shall be bound by all applicable provisions of ASTM D 2487 in the interpretation of soil classifications.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General:

1. Obtain trench backfill materials from one or more of the following:
 - a. Processed on-site materials,
 - b. Imported from off-site borrow areas,
 - c. Processing plants.
2. Provide materials as indicated or as may be necessary to complete the Work at no additional cost to the District, unless a unit price item is included for trench backfill materials in the bidding schedule.
3. Provide materials as indicated in the Schedule in Part 3.
4. Soils unsuitable for use as trench backfill materials:
 - a. Soils classified under ASTM D 2487 categories Pt, OH, CH, MH, or OL; or soils that contain classifications Pt, OH, CH, MH, or OL in combination with any other soil classification, such as CH/CL.
 - b. Soils which cannot be compacted sufficiently to achieve the density specified for the intended use, are highly expansive, or are unstable or "pump", regardless of the degree of compaction.
 - c. Soils that contain hazardous or designated waste materials including petroleum hydrocarbons, pesticides, heavy metals, and any material which may be classified as hazardous or toxic according to applicable Regulations.
 - d. Soils that contain greater concentrations of chloride or sulfate ions, or have a soil resistivity or pH less than the existing on-site soils.
 - e. Topsoil, except as allowed below.
 - f. Soils containing rocks, stones, or boulders larger than specified.
 - g. Soils that contain more than 5 percent organic matter when tested in accordance with ASTM D 2974.

B. Native Materials:

1. Materials generated from on-site materials conditioned as follows:
 - a. Maximum particle size: 3 inches.
 - b. Percent passing No. 200 sieve: Less than 5 percent.
 - c. Sand equivalent: 30 minimum.

C. Crushed Rock:

1. Manufactured, angular, crushed stone with a minimum sand equivalent value of 75.
2. Clean, hard, sound, durable, uniform in quality, and free of soft, friable, thin, elongated or laminated pieces, and disintegrated material.
3. Have 100 percent of its particles with at least one fractured face on a weight basis, when tested for crushed particles per ASTM D 5821.
4. Comply with the grading shown in the following table:

Sieve Size	Percentage Passing		
	1-inch	¾-inch	½-inch
1-1/2-inch	100	-	-
1-inch	90-100	100	-
¾-inch	30-60	90-100	100
½-inch	0-20	30-60	90-100
¾-inch	-	0-20	20-60
No. 4	0-5	0-5	0-15
No. 8	-	-	0-5

D. Sand:

1. General: Clean, coarse, natural sand free from organic material, suitable for the purpose intended.
2. Gradation: 90 percent to 100 percent will pass a No. 4 sieve and not more than 5 percent will pass a No. 200 sieve.

E. Aggregate Base: Class 2 aggregated base as specified in Section TS6.

F. Clay:

1. On-site or off-site clay material free of organic materials or rocks.
2. Permeability: Not greater than 1×10^{-6} cm/sec when tested in accordance with ASTM D2434.

G. Permeable Backfill:

1. General: Hard, durable, clean sand, gravel or crushed stone, free from organic material, clay balls or other deleterious substances.
2. Durability index: Not less than 40
3. Sand equivalent: Not less than 75.
4. Comply with the grading shown in the following table:

Sieve Sizes, Square Openings	Percent by Weight Passing Sieve
1-inch	100
3/4-inch	90 – 100
3/8"	40 – 100
No. 4	25 – 40
No. 8	18 – 33
No. 30	5 – 15
No. 50	0 – 7
No. 200	0 – 3

H. Structure Backfill Material:

1. General: Granular, low to non-expansive soil.
2. Plasticity index: 12 or less.
3. Liquid limit: 30 or less.
4. Comply with the grading shown in the following table:

Sieve Size	Percentage Passing
6-inch	100
3-inch	95-100
No. 200	15-50

I. Concrete: In accordance with Section 02515.

J. Cement Slurry Backfill:

1. Slurry cement backfill: Provide a fluid workable mixture of aggregate, cement, and water.
2. Cement: In accordance with Section 02515, except testing is not required.
3. Water: Free from oil, salts, and other impurities that adversely affect the backfill.
4. Aggregates: Select one of the following:
 - a. Commercial-quality concrete sand
 - b. Excavated or imported material in any combination, free of organic material and other deleterious substances and complying with the grading requirements shown in the following table:

Sieve size	Percentage passing
1-1/2"	100
1"	80–100
3/4"	60–100
3/8"	50–100

No. 4	40-80
No. 100	10-40

5. Proportion slurry cement backfill by weight or volume. Use at least 188 pounds of cement per cubic yard. Use sufficient water to produce a fluid workable mix that flows and can be pumped without segregation during placement.
6. Mix materials thoroughly by machine. Use a pugmill, rotary drum, or other authorized mixer. Mix until cement and water are thoroughly dispersed.

2.02 SOURCE QUALITY CONTROL

- A. Perform source quality control testing by approved testing laboratory and submit results to District.
- B. Frequency of Sampling of Imported Material: After initial testing demonstrates that the proposed borrow material meets the specified requirements, obtain and submit one additional sample for every 500 cubic yards of imported material.

PART 3 - EXECUTION

3.01 EXISTING UTILITY LOCATIONS

- A. Perform subsurface investigations to locate existing underground utilities.

3.02 REMOVAL AND REPLACEMENT OF PAVEMENT

- A. In paved areas, remove and replace pavement as follows unless otherwise indicated:
 1. Saw cut existing pavement along each side of the trench.
 2. Remove and dispose of the pavement lying within the limits of the saw cuts and from adjoining areas damaged by the cutting, removal, excavation and backfilling operations.
 3. During subsequent trench excavation and backfill activities, minimize disturbance of the adjoining pavement.
 4. Restore pavement surfaces to be similar to existing surfaces.

3.03 TRENCH EXCAVATION

- A. General Requirements
 1. Stabilize and support all faces of the trench excavation as specified in Section 02260 and 02261 Excavation.
 2. Clear, grub, and strip construction area as necessary to remove all vegetation and top soil as specified in Section 02200 Site Preparation.
- B. Open Trenches
 1. Open Trench Limitations: Unless otherwise indicated or required by the Agency having jurisdiction limit open trenches as follows:
 2. Travelled Way plus 3 feet either side:

- a. Do not open more than 200 lineal feet of excavated trench at any one time during the Work shift.
 - b. Up to 25 feet of trench as measured at the surface may remain open during any non-work shift, provided:
 - 1) The entire trench opening is plated with steel plates, secured to avoid movement, and the edges backfilled with temporary pavement to provide a smooth transition.
 - 2) Shoring is installed to prevent collapse of the trench excavation.
 3. Paved surfaces including road shoulders:
 - a. Do not open more than 200 lineal feet of excavated trench at any one time during the Work shift.
 - b. Up to 25 feet of trench as measured at the surface may remain open during any non-work shift provided the open trench is adequately plated, and the trench adequately shored.
 4. Open Trench Safety Requirements:
 - a. Provide traffic control.
 - b. Erect traffic barricades and warning lights meeting safety requirements of City of Oroville where open trench is within 12 feet of any travelled way.
 - c. Erect signs to warn oncoming vehicles of rough road or steel plates in road, as appropriate.
 - d. Provide fencing or warning tape to protect the public from open trench in open areas.
- C. Trench Excavations
1. Excavate trenches and maintain excavation such that pipe and pipeline accessories are installed in an open trench.
 2. Excavate to subgrade elevation and to trench width dimensions indicated on the Drawings.
 3. Excavate all materials of whatever nature encountered, including all obstructions of any nature that would interfere with the proper execution of the trenching Work unless otherwise indicated.
 4. Where pipelines are to be installed in embankments, fills, or structure backfills, construct fill to a level at least one foot above the top of the pipe before the trench is excavated.
 5. Trench shield:
 - a. If a moveable trench shield is used during excavation operations widen the trench width so that the shield is free to be lifted and then moved longitudinally without binding against the trench sidewalls.
 - b. If the trench walls cave in or slough, the trench shall be excavated as an open cut excavation with sloped sidewalls or with trench shoring, as indicated and as required by the pipe structural design.

- D. Trench Bottom: Excavate and shape trench bottoms to provide uniform subgrade for placement of Bedding Material.
1. Unsuitable Hard Trench Bottom: If bottom of excavation is found to consist of rock or any material that cannot be excavated to provide uniform bearing surface:
 - a. Notify Engineer of the conditions encountered and obtain concurrence that an unsuitable trench bottom condition is present.
 - b. Remove such rock or other material to a depth of not less than 3 inches below the original design elevation of the bottom of the trench.
 - c. Place bedding material or aggregate base course material to restore the trench bottom to the original design elevation. Place in lifts not exceeding 8 inches in un-compacted thickness and compact to 90 percent of maximum density.
 2. Unsuitable Soft Trench Bottom: If bottom of excavation is found to consist of soft or unstable material which is incapable of properly supporting pipe:
 - a. Notify Engineer of the condition encountered and obtain concurrence that an unsuitable trench bottom condition is present.
 - b. Remove such material to a depth and for the length required, as determined by the Engineer.
 - c. Place bedding material or aggregate base course material to restore the trench bottom to the original design elevation. Place in lifts not exceeding 8 inches in un-compacted thickness and compact to 90 percent of maximum density.
 3. Wet Trench
 - a. Where groundwater is present in the trench, develop and provide a wet trench section for review and approval by the Engineer.
 4. Over-excavation not ordered by the Engineer:
 - a. Any over-excavation carried below the grade ordered or indicated, shall be backfilled to the required grade with the indicated material and compaction. Such work shall be performed by Contractor at no additional cost to District.

3.04 EXCAVATION FOR MANHOLES, VAULTS AND OTHER PIPELINE STRUCTURES.

- A. Unless otherwise indicated, provide excavations sufficient to leave at least 12 inches clear between structure outer surfaces and the face of the excavation or any shoring which may be used to support the face of the excavation.
- B. Excavate to the subgrade soils beneath the bottom of the structure or bottom of crushed rock layer where indicated.
- C. Scarify the top subgrade soils to a depth of 6 inches, moisture condition, and re-compact to 90 percent of maximum density.

3.05 BEDDING ZONE

- A. Bedding Material: As scheduled herein or as indicated on the Drawings
- B. Depth of Bedding Material: As indicated on the Drawings.

- C. Place Bedding Material in a single lift, and at uniform density, with minimum possible compaction. Grade material to allow installation of the pipe at the design elevations.
- D. Depressions for Assembly of Joints
 - 1. Dig holes for bell or coupling assembly after Bedding Material has been placed at the trench bottom and fine graded to the design elevation.
 - 2. Create sufficient width and depth to provide ample room for tightening bolts, welding, or other joint assembly activities.
 - 3. Excavate holes only as necessary in making joints. Ensure that pipe rests upon prepared trench bottom and is not supported by any portion of the joint.

3.06 PIPE ZONE

- A. Pipe Zone Material: As scheduled herein or as indicated on the Drawings.
- B. Dimensions of Pipe Zone Material: As indicated on the Drawings.
- C. After the pipe is laid, place material within the Pipe Zone in lifts:
 - 1. Place backfill only after all water is removed from the excavation and the trench sidewalls have been dried to a moisture content suitable for compaction.
 - 2. Immediately prior to placing backfill materials remove all loose, sloughing, or caving soils and rock materials from the trench.
 - 3. Place in lifts not exceeding 8 inches in un-compacted thickness and compact to 90 percent of maximum density. Maintain level backfill on each side of pipe.
 - 4. Do not dump backfill materials directly on the pipe.
- D. Pipe Displacement
 - 1. Take necessary precautions in placement and compaction of to prevent displacement of piping.
 - 2. In the event there is movement of the pipe, excavate and re-lay the pipe.
- E. Consolidation:
 - 1. Do not use water-settling methods to consolidate trench backfill materials.
 - 2. Use mechanical means, shovel slicing or vibratory compaction, to compact granular backfill materials under pipe haunches.

3.07 TRENCH ZONE

- A. Trench Zone Material: As scheduled herein or as indicated on the Drawings.
- B. Dimensions of Trench Zone Material: As indicated on the Drawings
- C. Backfill voids that may form when removing shoring and bracing.
- D. Do not use water-settling methods to consolidate Trench Zone Material.
- E. Under Existing Crossing Pipes or Conduits Larger than 3 Inches in Diameter
 - 1. Backfill from the top of the Pipe Zone to the spring line of the intersecting pipe or conduit with Aggregate Base or Pipe Zone material. Place in lifts not

exceeding 8 inches in compacted depth and compact to 90 percent of maximum density.

2. Extend Pipe Zone material 2 feet on either side of crossing pipe or conduit to 6 inches above the top of the crossing pipe.
3. Backfill remainder of trench as described in this Section.

3.08 FINAL BACKFILL ZONE

- A. Unless indicated otherwise on the Drawings, restore the Site to the topography that existed prior to construction by excavation, compaction, finish grading and other earthwork operations, as necessary, for the areas affected by construction.
- B. Backfill with stockpiled topsoil in all areas where the original topsoil was removed as part of the site preparation and construction activities.
- C. Restore all drainage swales and water courses to their original alignments and grades.
- D. Install and maintain for a period of at least one year following completion of construction in any area, the facilities and management practices required by the Project Storm Water Pollution Prevention Plan, if any.
- E. Install and maintain for a period of at least one year following completion of construction in any area, the measures required by the environmental permitting Drawings, permits, and approval documents of the agencies that have issued permits for construction of the Project.
- F. Inside road rights-of-way:
 1. Unless otherwise indicated on the Drawings or required by the agency having jurisdiction of the road right-of-way, complete trench backfill as follows:
 2. Place in lifts not exceeding 8 inches in un-compacted depth.
 3. Compact to 90 percent of maximum density except compact to 95 percent the upper 24 inches below the finished grade.
 4. Replace aggregate base course to match existing aggregate base course thickness.
 5. Replace final surface as indicated on the Drawings, match existing thickness, or as required by the agency having jurisdiction of the right-of-way, whichever is greater.
- G. Outside road rights-of-way:
 1. Areas with unpaved surfaces:
 - a. Place final backfill in lifts not exceeding 18 inches in un-compacted depth and compact to 85 percent of maximum density.
 - b. In Open Areas, replace topsoil with material that was removed and stockpiled prior to trench excavation.
 2. Paved areas or driveways:
 - a. Backfill in lifts not exceeding 12-inches in un-compacted depth and compact to 90 percent maximum density.
 - b. Replace final surface as indicated on the Drawings or match existing thickness, whichever is greater.

- c. Replace driveway materials in kind.
- d. Match pre-construction condition or better.
- e. Smooth and compact material as required to create a smooth and firm driving surface.

3.09 COMPACTION REQUIREMENTS

- A. Compaction requirements specified herein are in-place densities of compacted backfill.
- B. Initial Trench Backfill Compaction Demonstration
 - 1. Demonstrate adequacy of compaction equipment and procedures before exceeding 500 lineal feet of trenching work.
 - 2. Continued Compaction Requirements: When specified degree of compaction is achieved, proceed with trenching and backfilling activities using the established equipment and procedures.

3.10 DISPOSAL OF SPOILS

- A. Dispose of unsuitable materials in a lawful manner at an off-site location.
- B. Dispose of spoils within the southern peninsula area as directed by the Engineer.
- C. Prior to removal of any materials from the project site, provide copies of permits, landowner agreements, and approvals to Engineer.

3.11 FIELD QUALITY CONTROL

- A. Cost of compliance testing: By Contractor.
- B. Frequency of testing: Periodic compliance tests will be made to verify that compaction is meeting requirements specified.
- C. Compaction Testing:
 - 1. Coordinate compaction testing and compliance with agency having jurisdiction over the Work within the public right-of-way.
 - 2. Submit copies to the District of compaction testing results for compaction testing.
 - 3. If compaction fails to meet specified requirements, perform remedial work by one of the following methods:
 - a. Remove and replace backfill at proper density.
 - b. Bring density up to specified level by other means acceptable to the Engineer.
 - c. Redo trench backfill compaction demonstration and demonstrate compaction process achieves required results.
- D. Frequency of trench backfill compaction confirmation testing:
 - 1. Each test location: Perform tests for each type or class of backfill from bedding to finish grade, excluding controlled low strength material (CLSM) and concrete slurry backfill
 - 2. Open fields: 1 test every 5,000 linear feet or at least one test per trench.

3. Non-paved roadways: 1 tests every 500 linear feet.
4. Crossing paved roadways: 1 test at each crossing.
5. Inside road rights-of-way:
 - a. 1 test every 300 linear feet, or at least one test.

3.12 SCHEDULE

- A. Construct pipeline using materials specified in the following schedule. Where options are provided, Contractor may select materials from the materials listed.
 1. Bedding Zone:
 - a. Class 2 Aggregate Base
 - b. Sand
 2. Wet Trench:
 - a. Class 2 Aggregate Base wrapped with filter fabric
 3. Embedment Zone:
 - a. Class 2 Aggregate Base
 - b. Sand
 4. Trench Zone:
 - a. Class 2 Aggregate Base

END OF SECTION

SECTION 02470
SITE FURNISHINGS

PART 1 - GENERAL

1.01 SCOPE OF WORK

The work included in this section generally consists of providing all labor, equipment and materials necessary to install all site furnishings complete as shown on the plans and as described herein.

1.02 RELATED SECTIONS

A. Section 02515 – SITE CONCRETE

1.03 SUBMITTALS

Submit 6 copies of manufacturer's cut sheet and specification for approval within two weeks of notice to proceed.

1.04 DELIVERY, STORAGE AND HANDLING

Contractor assumes all responsibility for storage of all materials relative to this project. District assumes no liability for losses or damages from any cause as a result of such storage.

1.05 PROJECT CONDITIONS – PROTECTION

A. After site furnishings are installed, all damage to surrounding paving, turf, and irrigation system shall be repaired by the contractor at the contractor's expense.

B. All trees and shrubs in and around the project site shall be protected by the contractor and, if damaged, replaced at the contractor's expense. This provision is in effect until acceptance by District of the complete project

1.06 LOCATION INSPECTION

No equipment, apparatus or foundations for same shall be placed until location stakes have been inspected and accepted by the District of Riverbend Park.

1.07 GUARANTEE & LIABILITY INSURANCES

A. Manufacturer shall guarantee all materials and workmanship for a period of one (1) year exclusive of vandalism.

B. The manufacturer will be required to provide complete installation drawings including specifications and a replacement parts list for all products.

C. Contractor shall provide a written guarantee on his firm's letterhead for all materials and workmanship for a period of one (1) year, exclusive of vandalism. Written guarantee shall be submitted to the District at the final inspection prior to final acceptance of the work.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated; free of surface blemishes and complying with the following:
1. Rolled or Cold-Finished Bars, Rods, and Wire: ASTM B 211 (ASTM B 211M).
 2. Extruded Bars, Rods, Wire, Profiles, and Tubes: ASTM B 221 (ASTM B 221M).
 3. Structural Pipe and Tube: ASTM B 429.
 4. Sheet and Plate: ASTM B 209 (ASTM B 209M).
 5. Castings: ASTM B 26/B 26M.
- B. Steel and Iron: Free of surface blemishes and complying with the following:
1. Plates, Shapes, and Bars: ASTM A 36/A 36M.
 2. Steel Pipe: Standard-weight steel pipe complying with ASTM A 53, or electric-resistance-welded pipe complying with ASTM A 135.
 3. Tubing: Cold-formed steel tubing complying with ASTM A 500.
 4. Mechanical Tubing: Cold-rolled, electric-resistance-welded carbon or alloy steel tubing complying with ASTM A 513, or steel tubing fabricated from steel complying with ASTM A 1011/A 1011M and complying with dimensional tolerances in ASTM A 500; zinc coated internally and externally.
 5. Sheet: Commercial steel sheet complying with ASTM A 1011/A 1011M.
 6. Expanded Metal: Carbon-steel sheets, deburred after expansion, and complying with ASTM F 1267.
 7. Malleable-Iron Castings: ASTM A 47/A 47M, grade as recommended by fabricator for type of use intended.
 8. Gray-Iron Castings: ASTM A 48/A 48M, Class 200.
- C. Stainless Steel: Free of surface blemishes and complying with the following:
1. Sheet, Strip, Plate, and Flat Bars: ASTM A 666.
 2. Pipe: Schedule 40 steel pipe complying with ASTM A 312/A 312M.
 3. Tubing: ASTM A 554.
- D. Fiberglass: Multiple laminations of glass-fiber-reinforced polyester resin with UV-light stable, colorfast, nonfading, weather- and stain-resistant, colored polyester gel coat, and manufacturer's standard finish.
- E. Plastic: Color impregnated, color and UV-light stabilized, and mold resistant.
1. Polyethylene: Fabricated from virgin plastic HDPE resin.
- F. Anchors, Fasteners, Fittings, and Hardware: Manufacturer's standard, corrosion-resistant-coated or noncorrodible materials; commercial quality, tamperproof, vandal and theft resistant, concealed, recessed, and capped or plugged.
- G. Nonshrink, Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107; recommended in writing by manufacturer, for exterior applications.

- H. Erosion-Resistant Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with potable water at Project site to create pourable anchoring, patching, and grouting compound; resistant to erosion from water exposure without needing protection by a sealer or waterproof coating; recommended in writing by manufacturer, for exterior applications.
- I. Galvanizing: Where indicated for steel and iron components, provide the following protective zinc coating applied to components after fabrication:
 - 1. Zinc-Coated Tubing: External, zinc with organic overcoat, consisting of a minimum of 0.9 oz./sq. ft. (0.27 kg/sq. m) of zinc after welding, a chromate conversion coating, and a clear, polymer film. Internal, same as external or consisting of 81 percent zinc pigmented coating, not less than 0.3 mil (0.0076 mm) thick.
 - 2. Hot-Dip Galvanizing: According to ASTM A 123/A 123M, ASTM A 153/A 153M, or ASTM A 924/A 924M.

2.02 FABRICATION

- A. Metal Components: Form to required shapes and sizes with true, consistent curves, lines, and angles. Separate metals from dissimilar materials to prevent electrolytic action.
- B. Welded Connections: Weld connections continuously. Weld solid members with full-length, full-penetration welds and hollow members with full-circumference welds. At exposed connections, finish surfaces smooth and blended so no roughness or unevenness shows after finishing and welded surface matches contours of adjoining surfaces.
- C. Pipes and Tubes: Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of handrail and railing components.
- D. Preservative-Treated Wood Components: Complete fabrication of treated items before treatment if possible. If cut after treatment, apply field treatment complying with AWPA M4 to cut surfaces.
- E. Exposed Surfaces: Polished, sanded, or otherwise finished; all surfaces smooth, free of burrs, barbs, splinters, and sharpness; all edges and ends rolled, rounded, or capped.
- F. Factory Assembly: Assemble components in the factory to greatest extent possible to minimize field assembly. Clearly mark units for assembly in the field.

2.03 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.04 ALUMINUM FINISHES

Baked-Enamel, Powder-Coat Finish: Manufacturer's standard, baked, polyester, powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.

2.05 STEEL AND GALVANIZED STEEL FINISHES

A. Baked-Enamel, Powder-Coat Finish: Manufacturer's standard, baked, polyester, powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.

B. PVC Finish: Manufacturer's standard, UV-light stabilized, mold-resistant, slip-resistant, matte-textured, dipped or sprayed-on, PVC-plastisol finish, with flame retardant added; complying with coating manufacturer's written instructions for pretreatment, application, and minimum dry film thickness.

2.06 IRON FINISHES

Baked-Enamel, Powder-Coat Finish: Manufacturer's standard, baked, polyester, powder-coat finish complying with finish manufacturer's written instructions for surface preparation, including pretreatment, application, baking, and minimum dry film thickness.

2.07 STAINLESS-STEEL FINISHES

A. Remove tool and die marks and stretch lines or blend into finish.

B. Grind and polish surfaces to produce uniform, directionally textured, polished finish indicated, free of cross scratches. Run grain with long dimension of each piece.

PART 3 – EXECUTION

3.01 LAYOUT

Contractor shall stake/mark locations for all slabs and foundations and shall obtain the approval of their location from Landscape Architect prior to commencing any digging. Locations shall be adjusted to provide minimum clear distances required from all edges of slabs, trees, irrigation heads, or other obstructions.

3.02 CONCRETE WORK

All concrete work shall conform to the Standard Plans, and those of Section 02515. Contractor shall obtain the approval of all forming from the Landscape Architect prior to pouring any concrete slabs. Foundations holes shall be inspected and approved by the Public Works Inspector prior to pouring concrete.

3.03 INSTALLATION

A. Unless otherwise indicated, install site furnishings after landscaping and paving have been completed.

- B. Install site furnishings level, plumb, true, and securely anchored and positioned at locations indicated on Drawings.
- C. Posts Set into Voids in Concrete: Form or core-drill holes for installing posts in concrete to depth recommended in writing by manufacturer of site furnishings and 3/4 inch (19 mm) larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions, with top smoothed and shaped to shed water.
- D. All site furnishings shall be installed with vandal-proof hardware or made vandal-proof (deforming or peening).
- E. Maintain specific required distance between top of paving and product, drinking fountain, bench, etc).
- F. Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Complete field assembly of site furnishings where required.
- G. All products to be installed according the manufacturers' specifications. If discrepancies occur, notify District's Representative as soon as possible before proceeding with installation.
- H. Contractor to repair, repaint all minor damage during installation.

3.04 PROTECTION OF EXISTING IMPROVEMENTS

Contractor shall protect all existing improvements from damage. All disturbed turf areas shall be fine graded filling all depressions, wheel ruts and irregularities and shall be reseeded with seed mix specified by the Landscape Architect. Contractor shall make all repairs and restore all damaged turf areas at his sole expense.

3.05 CLEAN-UP

- A. After completing site furnishing installation, inspect components. Remove spots, dirt, and debris. Repair damaged finishes to match original finish or replace component.
- B. Contractor shall clean up and legally dispose of all unused materials, excess soil, and debris at regular intervals throughout the duration of the work, and as directed by the District.

END OF SECTION

SECTION 02515
SITE CONCRETE

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Furnish all labor, materials and equipment required for the reinforcement, formwork and the construction of cast-in-place concrete footings, walls, post caps, stairs, sidewalks and mow bands including all other work required to produce a finished project in accordance with the Drawings and as specified herein.

1.02 RELATED WORK

- A. Miscellaneous Concrete Special Provisions
- B. Section 02316 Fill and Backfill
- C. Special Provisions - Aggregate Base

1.03 QUALITY ASSURANCE

- A. Comply with ASTM A-615 "Standard Specifications for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement," and "Manual of Standard Practice for Detailing Reinforced Concrete Structures," publication ACI 315-65 of the American Concrete Institute.
- B. Comply with all pertinent recommendations contained in American Concrete Institute (ACI), "Recommended Practice of Concrete Formwork, ACI-347."
- C. Construct forms to sizes, shapes, lines and dimensions indicated on Drawings, and to obtain accurate alignment, location, grades, level and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required in work. Use selected materials to obtain required finish. Solidly butt joints and provide back-up at joints to prevent leakage of cement paste.
- D. Provide complete forms of such strength and construction as to prevent any spread, shifting, or settling when concrete is deposited, and tight enough to avoid any leakage or washing out of cement mortar.

1.04 JOB CONDITIONS

- A. Temperature: All concrete design mixes and methods of protecting concrete shall be resubmitted to the Landscape Architect for review when the following temperatures are anticipated:
 - 1. The temperature is below 40° F, or when conditions indicate that the temperature will fall below 40° F within seventy-two (72) hours.
 - 2. The placing temperature of the concrete is, or anticipated to be, above 80° F.

1.05 COORDINATION

- A. Secure all pipe sleeves, anchors and bolts, including those for angle frames, inserts, ties and other materials in connection with concrete construction, in position before concrete is placed.
- B. Obtain information and instructions from other Trades and suppliers in ample time to schedule and coordinate the installation of items furnished by them to be embedded in concrete so provisions for their work can be made without delaying the project.
- C. Make cutting and/or patching made necessary by failure or delay in complying with these requirements at no cost to the District.

1.06 FORM CONSTRUCTION TOLERANCES

- A. Set form to required grades and lines, rigidly braced and secured. Install sufficient quantity of forms to allow continuous progress of work so that forms can remain in place at least twenty-four (24) hours after concrete placement.
- B. Check completed formwork for grade and alignment to following tolerances:
 - 1. Top of forms not more than one-eighth (1/8) inch in ten (10) feet vertical elevation.
 - 2. Vertical face on longitudinal axis not more than one-fourth (1/4) inch in ten (10) feet horizontal width.

1.07 SMOOTHNESS TOLERANCE

- A. Cement finish surfaces shall be of such smoothness and evenness that they shall contact the entire length of a 10-foot straight edge laid in any direction, with an allowable tolerance of 1/8 inch. Any operations necessary to achieve this result should be performed by the Contractor, at no additional cost to the District.
- B. No patching will be permitted to correct defective work; defective sections shall be removed and replaced. No extensions of time will be allowed for correcting defective work.

1.08 INSPECTIONS

- A. Inspections will be required. Contractor shall call for inspection a minimum of 48 hours (two working days) prior to need.
- B. The contractor shall call for inspection during specific phases of construction. They shall include the following, each prior to pour:
 - 1. Subgrade
 - 2. All Form Work
 - 3. Steel Reinforcing
 - 4. All Footings
- C. Contractor shall notify the District's Representative 48 hours prior to each concrete pour.
- D. Any work covered prior to inspection shall be opened to view by the Contractor at his expense.

1.09 TESTING

- A. All testing shall be as required by the Standard Specifications and these Contract Documents.

1.10 MOCK-UPS

- A. Prior to construction, provide (1) 3-foot x 3-foot x 4-inch sample of each paving and wall face type specified on Drawings.
- B. Ensure that each mock-up contains joint types specified on project, i.e. construction, contraction (expansion) and isolation (score).
- C. Locate mock-ups in a conveniently accessible and protected place. At contractor's cost, additional mock-ups shall be provided as needed until approved. Approved mock-ups will be standard for future installation review.
- D. Remove mock-ups from site upon completion of Work and approval by Landscape Architect.

1.11 SUBMITTALS

- A. See Section 01300 – Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturer's data on manufactured products for approval.
- C. Shop drawings: Indicate formwork, dimensions, reinforcement, accessories and control and expansion joint layout.
- D. Mix design: Submit each class of concrete to approved inspection and testing firm and the District for review prior to commencement of concrete operations.
- E. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.

PART 2 - PRODUCTS

2.01 CONCRETE REINFORCEMENT

- A. Reinforcing Bars: Deformed Billet Steel Bars, ASTM A-615, Grade 40 or Grade 60.
- B. Welded Wire Mesh: ASTM A-186 plain type and uncoated finish.
- C. Tie Wires: Black annealed, ASTM A-82, minimum 16 gauge.
- D. Chains, Bolsters, Bar supports, Spacers: Sized and shaped for strength and support of reinforcement during installation and placement of concrete.
- E. Stirrup Steel: ASTM A-82.
- F. Smooth dowel steel bars for construction joints: ASTM A-29, Grade 60.
 - 1. Where indicated, provide dowel sleeve at one end of greased dowel to permit longitudinal movement of dowel within concrete section.

2. Provide for movement which equals joint width plus one-half (1/2) inch.

2.02 CONCRETE FORM MATERIALS

- A. Slabs, Walks, Walls, Columns and Concrete edges: Steel, wood or other suitable material of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal. Use straight forms, free of distortion and defects.
 1. Use flexible spring steel forms or laminated boards to form radius bends and foam templates for detailed edges as required.
 2. Coat forms with a non-staining form release agent that will not discolor or deface surface of concrete.
- B. Forms for Exposed Finish Concrete: Unless otherwise shown, construct formwork for exposed concrete surfaces with plywood, to provide continuous, straight, smooth, exposed surfaces. Provide plywood in largest practicable sizes to minimize number of joints. Provide form material with sufficient thickness to withstand pressure of newly placed concrete without bow or deflection. Provide solid backing and form supports to insure stability of forms. On any length of wall, the difference in form piece size shall not be greater than 25% plus or minus the dimension of the smallest piece and in no case smaller than two (2) inches in width.
 1. Use five (5) ply exterior plywood complying with U.S. Product Standard PS 1-66, "B-B (Concrete Form) Plywood," Class 1, Exterior Grade or better, with each piece bearing legible inspection trademark.
 2. Use form material in largest practicable sizes to minimize number of form joints. Arrange form joints orderly and symmetrically with minimum number of joints.
- C. Forms for Unexposed Finish Concrete: Form concrete surfaces which will be unexposed with plywood, lumber, metal or other acceptable material. Provide lumber dressed on at least two (2) edges and on one side for tight fit that is fir or pine, No. 2 common or better.
- D. Circular Concrete Footings or Columns: All round concrete footings or columns, size as indicated on Drawings, shall be formed with seamless "SONOTUBE" fiber forms as manufactured by Sonoco Products Company of Hartsville, South Carolina.
- E. Forms for Curved Exposed Surfaces: Forms shall be built up with hand sawn two (2) inch stringers, sized and carefully fitted to desired form, with segmental tacking. Exposed face surfaces shall be sheet metal, oil tempered hardboard, or one-quarter (1/4) inch waterproof plywood facing.
- F. Form Ties: Factory-fabricated, adjustable-length, removable or snap-off metal form ties (break back cone ties), designed to prevent form deflection, and to prevent spalling concrete surfaces upon removal. All form ties to be used on unexposed concrete surfaces.
- G. Chamfer Exposed Corners and Edges: Chamfer exposed corners and edges as indicated on Drawings using wood chamfer strips fabricated to produce uniform smooth lines and tight edge joints.
- H. Radius Exposed Corners: Apply concrete radius tooled edges to exposed concrete corners as dimensioned and sized on Drawings.

- I. Rough Hardware: Pipe, conduit, bolts, anchors, etc., as indicated on Drawings or needed shall be furnished and set.
- J. Chamfer Horizontal Reveal: Chamfer concrete wall horizontal reveals, as indicated on Drawings, using wood chamfer strips fabricated to produce uniform smooth lines and tight edge joints.

2.03 CONCRETE ACCESSORIES

- A. Bonding Agent: ASTM C 1059, Type II acrylic non-redispersable type.
- B. Epoxy Bonding System: ASTM C 881, type as required by project conditions.
- C. Vapor Retarder: 6 mil (0.5 mm) thick clear polyethylene film, type recommended for below grade application.
- D. Chemical Hardener: Fluosilicate solution designed for densification of cured concrete slabs.
- E. Non-Shrink Grout ASTM C 1107; premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
 - 1. Minimum Compressive Strength at 48 Hours: 2,400 psi (17 MPa).
 - 2. Minimum Compressive Strength at 28 Days: 7,000 psi (48 MPa).
- F. Moisture-Retaining Cover: ASTM C 171; white burlap-polyethylene sheet.
- G. Liquid Curing Compound: ASTM C 309, Type 1, clear or translucent with guarantee not to leave surface residue.

2.04 JOINT DEVICES AND MATERIALS

- A. Expansion Joint Filler: Nonextruding, resilient asphalt impregnated fiberboard of felt, 1/4-inch-thick and full depth of concrete less 1/2 inch.
- B. Construction Joint Devices: Integral extruded plastic; 1/4-inch-thick, formed to tongue and groove profile, with removable top strip exposing sealant trough, knockout holes spaced at 6 inches, ribbed steel spikes with tongue to fit top screed edge.
- C. Joint Cap: Plastic joint size to match expansion joint size by Sealtight or approved equal
- D. Elastomeric Sealant: Joint sealer color to match concrete.

2.05 CONCRETE

- A. Concrete Mix:
 - 1. Mix concrete in accordance with ASTM C-94 and with aggregates complying with ASTM C-33 and Portland Cement ASTM C-150, Type II.
 - 2. All concrete mixes shall be designed by a testing laboratory approved by the District's Representative or Landscape Architect. All mixes shall conform to applicable building code requirements listed herein or on the Drawings. All mix designs shall be submitted to the Landscape Architect for approval before being used. Mix design shall show proportions of

cement, fine and coarse aggregate, and water and gradation of combined aggregates. Calcium chloride shall not be added at any mix.

3. Add fiber mesh reinforcement fibers per manufacturer's specifications to all flatwork. Refer to civil Engineering plans.
4. Alteration of approved concrete mixes is not acceptable. Installation of concrete other than approved mixes shall be replaced at the expense of the contractor.
5. Construction of all slabs on grade, curbs, exterior walkways, footings, stairs and post caps shall be of Class "A" Portland cement as specified in Section 90, "Portland Cement Concrete" of the Standard Specifications, and shall conform to the provisions of Section 90-10 "Minor Concrete" of the Standard Specifications.
6. Exposed Aggregate mix per plan.
7. Color per plan.
8. See Special Provisions, Miscellaneous Concrete section for additional concrete mix information.

2.06 MIXING

- A. On Project Site: Mix in drum type batch mixer, complying with ASTM C 685. Mix each batch not less than 1-1/2 minutes and not more than 5 minutes.
- B. Transit Mixers: Comply with ASTM C 94/C 94M.

2.07 ADMIXTURES

- A. Chemical admixtures shall conform to the requirements, of Section 90-4.04 through 90-4.07 of the State Standard Specifications.

2.08 PORTLAND CEMENT CONCRETE

- A. Shall conform to the provisions in Standard Specifications Section 90 "Portland Cement".

2.09 EXPANSION JOINTS

- A. Shall be as shown on plans and details. Submit samples of preformed material and sealant for approval by the District.

2.10 CONCRETE CURING COMPOUND

- A. Plast-A-Cure Heavy Duty Curing Compound or Approved Equal: Concrete curing compound shall be a white-pigmented curing compound conforming to the requirements of Section 90-7.01 B, "Curing Compound Method" of the State Standard Specifications and shall be a product conforming to ASTM C 309, Type 2, Class B.

2.11 SCORE JOINT

- A. Shall be as shown on the drawings and details, or as called for in the City of Oroville, Department of Public Works Standard Plans.

PART 3 - EXECUTION

3.01 GENERAL

- A. All off site work shall conform to the requirements of City of Oroville, Department of Public Works Standard Plans unless noted otherwise on the plans.
- B. All work shall conform to the foundation investigation report. Slab thicknesses, reinforcement, compaction requirements, and base recommendations shall take precedence over details and plan callouts.
- C. All concrete slabs shall slope to drain. Depressions in the slab surface that hold water ("bird baths") will not be acceptable.
- D. Install concrete and cement finish work true to lines, dimensions and levels. Finishing to conform to the City of Oroville Standard Plans unless noted otherwise on plans.
- E. Protect all finished concrete from graffiti. Contractor shall be responsible for providing concrete watchmen. A graffiti finish will not be acceptable.
- F. Remove and replace defective concrete or cement work with new materials. Permission to patch any defective area shall not be a waiver of the District's right to require complete removal of defective work if patching does not restore quality and appearance of work.
- G. Verify lines, levels, and dimensions before proceeding with work of this section.
- H. No advertising impression, stamp, or mark of any description will be permitted on surface of concrete or cement finish.

3.02 CONCRETE REINFORCEMENT PLACEMENT

- A. Fabricate reinforcement in accordance with ACI-315, providing a minimum concrete cover of two (2) inches.
- B. Place all reinforcement in the exact position shown on the Drawings and secure in position during the placing and compacting of concrete. Wire bars together with No.16-gauge wire with ties at all intersections except where spacing is less than twelve (12) inches in each direction, in which case tie alternate intersections.
- C. Overlap welded wire mesh one square plus six (6) inches to maintain a uniform strength, and securely fasten at the ends, edges and support to maintain clearances.
- D. Place all sleeves, inserts, anchors and embedded items required for adjoining work or for its support prior to concreting. Fill voids in embedded items temporarily with readily removable material to prevent entry of concrete.
- E. Give all contractors and subcontractors whose work is related to concrete or supported by it, ample notice and opportunity to introduce and/or furnish embedded items before concrete placement.

3.03 CONCRETE FORMWORK CONSTRUCTION

- A. Construct support, brace and maintain formwork to support vertical and lateral loads that might be applied until such loads can be supported by concrete.

- B. Contractor assumes full responsibility in the removal of forms. The length of time forms must remain in place depends on the rate of time required for concrete to obtain a proper strength. Remove forms after the concrete is sufficiently hard to prevent damage to concrete.
- C. Reuse of Forms:
 - 1. Do not reuse forms if there is any evidence of surface wear or defect which would impair quality of surface.
 - 2. Thoroughly clean and properly coat forms before reuse.
- D. Earth Forms
 - 1. Hand trim sides and bottom of earth forms. Remove loose soil prior to placing concrete

3.04 APPLICATION - FORM RELEASE AGENT

- A. Apply form release agent on formwork in accordance with manufacturer's recommendations.
- B. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

3.05 INSERTS, EMBEDDED PARTS, AND OPENINGS

- A. Provide formed openings where required for items to be embedded in or passing through concrete work.
- B. Locate and secure in place items that will be cast directly into concrete.
- C. Coordinate with work of other sections in forming and placing openings, slots, inlets, recesses, sleeves, bolts, anchors, other inserts, and components of other work.
- D. Install accessories in accordance with manufacturer's instructions, so they are straight, level, and plumb. Ensure items are not disturbed during concrete placement

3.06 FORM REMOVAL

- A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.
- B. Field Quality Control:
 - 1. Observe formwork continuously while concrete is being placed to see that there are no deviations from desired elevation, alignment, plumbness or camber.
 - 2. If during construction any weakness develops and falsework shows undue settlement or discoloration, stop work, remove affected construction if permanently damaged, and strengthen falsework.
 - 3. Verify that forms are clean and free of rust before applying release agent.

3.07 CONCRETE PLACEMENT AND FINISHES

A. Placing Concrete:

1. Place concrete in accordance with ACI-304 and Section 2605 of the Uniform Building Code. Immediately after depositing, compact concrete thoroughly by mechanical vibration. No vibrating of form is allowed. Mixing shall be continuous, with no interruptions from the time the truck is filled until the time it is emptied. Concrete shall be placed within one hour of the time water is first added.
2. Insure anchors, seats, plates, and other items to be cast into concrete are placed, held securely and will not cause hardship in placing concrete.
3. Insure reinforcement, inserts, embedded parts, etc. are not disturbed during concrete placement.
4. Pour concrete continuously between predetermined construction and control joints. Do not break or interrupt successive pours such that cold joints occur, unless otherwise indicated on the Drawings.
5. Lines and Grades: Elevations requiring accurate placement shall be set by a competent instrument man, using a professional type instrument.
6. For all concrete placed on soil, the subgrade shall be wet and compacted prior to placing.
7. Before placing concrete mixing, conveying and finishing equipment, forms and reinforcing shall be well-cleaned. Wet form before placing concrete, unless oiled forms are used.
8. Notify Landscape Architect at least 48, hours prior to commencement of concrete placement operations.
9. Repair vapor retarder damaged during placement of concrete reinforcing. Repair with vapor retarder material; lap over damaged areas minimum 6 inches (150 mm) and seal watertight.
10. Install joint devices in accordance with manufacturer's instructions.
11. Install construction joint devices in coordination with concrete slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
12. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
13. Place concrete continuously between predetermined expansion, control, and construction joints.
 - a. Do not interrupt successive placement; do not permit cold joints to occur

B. Concrete Finishing

1. Exterior Slabs and Sidewalks:
 - a. Medium broom finish per plan
 - b. Exposed Aggregate finish per plan

- c. All exterior slabs, sidewalks and top of walls to have non-slip uniform surface per plan.
 - d. After concrete has been placed, consolidate strikeoff and screed uniformly to the required grades. Float concrete to a uniform surface, then steel trowel lightly to compact surface. Finish exterior slabs and sidewalks as detailed on Drawings. Exterior slabs and sidewalks shall be formed with slopes as indicated, as directed or as necessary to insure proper drainage. Exterior slabs and sidewalks adjacent to buildings shall drain away from buildings.
2. Exterior Walls:
- a. Smooth Form Finish – where shown on drawings
 - b. Consolidate by vibration so that concrete is thoroughly worked around reinforcement, embedded items and into corners of forms to eliminate air or stone pockets. As-cast concrete surfaces obtained with form material as detailed on Drawings. Provide uniform concrete finish to walls as detailed on Drawings. At direction of Landscape Architect, light sandblasting of concrete surfaces shall be required to eliminate form seams and marks. Fill all snap tie holes to match surrounding finish.
 - c. Repair surface defects, including tie holes, immediately after removing formwork.
3. Unexposed Form Finish: Rub down or chip off fins or other raised areas.

3.08 CURING

- A. Beginning immediately after placement, protect concrete from premature drying, from excessively hot or cold temperatures, and from mechanical injury. Maintain concrete with minimal moisture loss at relatively constant temperature for a period necessary for hydration of cement and hardening of concrete.
 1. Normal concrete: Not less than 7 days.
 2. Hairline fissures and cracks developed in first ninety (90) days shall result in replacement of concrete.
- B. Comply with requirements of ACI 308 and ASTM C171. Immediately after placement protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury. Cover with white burlaps-polyethylene sheet.
- C. Initial curing shall be moist curing or moisture covering and shall continue for at least 188 emulative hours (not necessarily consecutive), during which the concrete has been exposed to air temperatures above 50 degrees F. Avoid rapid drying at the end of the curing period.
- D. Use water that is free of impurities that could etch or discolor concrete surfaces.
- E. Do not use liquid membrane curing compounds on surfaces which are to be covered with a coating material applied directly to the concrete or with a covering material bonded to the concrete, such as other concrete, liquid floor hardener, waterproofing, damp-proof flooring, painting, and other coatings and finish materials, unless otherwise acceptable to the Inspector.

- F. Formed Surfaces: Cure by moist curing with forms in place for full curing period. Surfaces Not in Contact with Forms:
1. Start initial curing as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.
 2. Begin final curing after initial curing but before surface is dry.
 - a. Moisture-retaining cover. Seal in place with waterproof tape or adhesive.
 - b. Curing compound: Apply in two coats at right angles, using application rate recommended by manufacturer.

3.09 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 01400.
- B. Provide free access to concrete operations at project site and cooperate with appointed firm.
- C. Tests of concrete and concrete materials may be performed at any time to ensure conformance with specified requirements.
- D. Compressive Strength Tests: ASTM C 39/C 39M. For each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cu yd (76 cu m) or less of each class of concrete placed.
- E. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C 143/C 143M.

3.10 DEFECTIVE CONCRETE

- A. Test Results: The testing agency shall report test results in writing to the District and Contractor within 24 hours of test.
- B. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- C. Repair or replacement of defective concrete will be determined by the District. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
- D. Contractor to be responsible for epoxy grouting repair of any cracks occurring in the concrete which exceed 1/8" as directed by Landscape Architect.
- E. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of the Landscape Architect for each individual area.

3.11 COORDINATION

- A. Bench posts, bike rack posts, drinking fountain, etc. shall be set in cured footings prior to placing concrete slab. Block outs will not be permitted.

END OF SECTION

SECTION 02811

IRRIGATION

PART 1 - GENERAL

1.01 CONDITIONS

- A. The general provisions of the Contract, including General and Supplementary Conditions and Special Provisions (if any) apply to the work specified in this Section.

1.02 SCOPE OF WORK

- A. Furnish all labor, materials, processes, and equipment necessary to complete the irrigation system work as indicated on the Drawings and specified herein.
- B. Test the entire irrigation system to assure proper operation.
- C. Furnish all labor, materials, and equipment necessary to restore all disturbed areas resulting from the work as indicated on the Drawings and specified herein.
- D. 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. All systems shall be in satisfactory operation at the time of completion.
 - 1. Related work specified in other sections:
 - a. Section 01600 - **PRODUCT REQUIREMENTS**
 - b. Section 01780 - **CLOSEOUT SUBMITTALS**
 - c. Section 02100 - **DEMOLITION**
 - d. Section 02905 - **LANDSCAPE INSTALLATION**
 - e. Section 02970 - **LANDSCAPE MAINTENANCE**

1.03 QUALITY ASSURANCE & REQUIREMENTS

- A. Permits and Fees: The Contractor shall obtain and pay for all permits and all observations as required.
- B. Manufacturer's Directions: Manufacturer's directions and detailed Drawings shall be followed in all cases where the manufacturers of articles used in this Contract furnish directions covering points not shown in the Drawings and Specifications
- C. Ordinances and Regulations
 - A. All local, municipal and state laws, rules and regulations governing or relating to any portion of this work are hereby incorporated into and made a part of these Specifications and their provisions shall be carried out by the Contractor.

- B. All rules and regulations governing or relating to the California Code of Regulations, Title 23, Division 2, Chapter 2.7, 2015 Updated Model Water Efficient Landscape Ordinance are hereby incorporated into and made a part of these Specifications and their provisions shall be carried out by the Contractor.
- C. The materials and work of this section shall conform to all applicable provisions of the latest editions of the Uniform Plumbing Code, the National Electrical Code, and all codes properly governing the materials and work at the project site.
- D. All electrical materials and work shall conform to California Administrative Code, Title 23, Part 3, Basic Electrical Regulations, and Article 18 E 110-16.
- E. Anything contained in these Specifications shall not be construed to conflict with any of the above rules and regulations or requirements of the same. However, when these Specifications and Drawings call for or describe materials, workmanship, or construction of a better quality, higher standard, or larger size than is required by the above rules and regulations, the provisions of the Specifications and Drawings shall take precedence.

D. Explanation of Drawings

- 1. Not all offsets, fittings, sleeves, main line, lateral, etc., which may be required are shown on plans. Carefully investigate the structural and finish conditions affecting all the work and plan the work accordingly furnishing such fittings; etc., as may be required to meet such conditions. Drawings are generally diagrammatic and indicative of the work to be installed. Due to the scale of the Drawings, it is not possible to indicate all offsets, fittings, sleeves, etc., which may be required to complete the irrigation system.
- 2. Before proceeding with any work, the Contractor shall check and verify all dimensions, quantities, pressures and flows and shall immediately inform the District of any discrepancy between the drawing and/or the Specifications and actual conditions. No work shall be done in any area where there is such a discrepancy until the District has given written approval for the same. The Contractor shall assume full responsibility for work installed without approval.
- 3. The materials and work shall be installed in such a manner as to avoid conflicts between irrigation system and planting, existing or proposed utilities, and all other construction features.
- 4. Contractor shall verify prior to and during construction, that his contract documents reflect the latest revisions and change orders. Contractor shall be able to produce such documents at the request of the District.
- 5. Pipe sizes indicated on the Drawings are minimum allowable.

1.04 EXISTING CONDITIONS

- A. The Contractor shall exercise due care to protect all existing facilities, structures and utilities both above ground and underground on the site.
- B. The contractor shall also exert every effort to maintain amenities, including specimen trees and natural areas integral to the aesthetic of the park design.

- C. Information on the Drawings, relative to existing conditions, is approximate only. Deviations found necessary during construction to conform to actual conditions, as approved by the District, shall be made without additional cost.
- D. Where it is necessary to excavate in areas of existing utilities, the contractor shall pothole to confirm exact locations of existing utilities. Exercise extreme care in excavating and working near existing utilities. The Contractor shall be responsible for all damages to existing utilities that are caused by his operation or neglect. In case of interruption of utilities caused by the contractor's operations or neglect, the contractor shall be responsible to have the utilities in service as soon as possible and in no case shall the interruption be longer than a twenty-four (24) hour period. In such case that the contractor needs more than a twenty-four (24) hour period, prior approval shall be acquired from the District in writing.
- E. Excavation in proximity to existing trees shall conform to the Tree Protection Measures per Contract Documents.

1.05 EXISTING IRRIGATION SYSTEM

- A. All existing irrigation shall be retained and protected unless otherwise specified on plans or in contract documents.
- B. The Contractor shall be responsible to repair and/or replace existing irrigation damaged by his operations or neglect at Contractor's expense.

1.06 SUBMITTALS

A. Material List

1. Contractor shall furnish the articles, equipment, materials, or processes specified by name in the Drawings and Specifications. Product names are used as standards only; other materials or methods shall not be used unless approved in writing by the District. Burden of proof as to equality of proposed material shall be on the Contractor; the District's decision is final. Only one request for substitution shall be considered for each item. Equipment capacities specified are minimum acceptable.
2. A complete material list (6 copies) shall be submitted to the District for approval prior to performing any work. The material list shall clearly identify the manufacturer, model number and description of materials and equipment to be used, including but not limited to the following:
 - a. Drip Irrigation Tubing and Fittings
 - b. PVC Solvent Weld Lateral Pipe and Fittings
 - c. PVC and HDPE Sleeves
 - d. PVC Conduit
 - e. PVC Solvent Cement and Primer
3. The contractor shall provide additional submittals as required for products not listed above but which are used on site. Approval of submittals is required before installation.
4. Equipment or materials installed or furnished without prior approval of the District shall be rejected and the Contractor shall be required to remove such materials from the site at his own expense.

5. Approval of any item, alternate or substitute indicates only that the product or products apparently meet the requirements of the Drawings and Specifications based on the information or samples submitted.

B. Record Drawings

1. The Contractor shall dimension from two (2) permanent points of reference, building corners, sidewalks, or road intersections, etc., the location of the following items:
 - a. Connection to existing irrigation laterals
2. Two (2) weeks prior to the date of the final observation, the Contractor shall deliver reproducible record drawings to the Landscape Architect for review. Delivery shall not relieve the Contractor of the responsibility of furnishing required information that may be omitted from the plans or from the requirements of the Close Out Documents.
3. Before final observation, the above-mentioned material submittals, record drawings, guarantee statement for irrigation system, shall be turned over to the District.

C. Equipment to be Furnished:

1. Irrigation Products to be Furnished:
 - a. One Hundred (100) feet of drip tubing for each type used.
 - b. Ten (10) drip emitters for each type used.
2. The above-mentioned equipment shall be turned over to the District at the conclusion of the project. Written evidence that the District has received materials must be provided to the Landscape Architect prior to scheduling final observation.

1.07 PRODUCT DELIVERY, STORAGE AND HANDLING

Handling of PVC Pipe and Fittings: The Contractor is cautioned to exercise care in handling, loading, unloading, and storing of PVC pipe and fittings. All PVC pipe shall be transported in a vehicle that allows the length of pipe to lie flat so as not to subject it to undue bending or concentrated external load at any point. Any section of pipe that has been dented or damaged will be discarded and if installed replaced with new.

1.08 GUARANTEE

1. The guarantee for the irrigation system shall be made in accordance with the form shown on the following page. A copy of the guarantee form shall be included in the operations and maintenance manual. The guarantee form shall be re-typed onto the Contractor's letterhead and contain the following information:

GUARANTEE FOR IRRIGATION SYSTEM

We hereby guarantee that the irrigation system we have furnished and installed is free from defects in materials and workmanship, and the work has been completed in accordance with the Drawings and Specifications, ordinary wear and tear and unusual abuse or neglect excepted. We agree to repair or replace any defects in material or workmanship, which may develop during the period of one (1) year from date of final acceptance and to repair or replace with originally specified materials. Any damage resulting from the repairing or replacing of such defects shall be replaced and repaired by the contractor at no additional cost to the District. We shall make such repairs or replacements within a 48-hour period, after receipt of written notice. In the event of our failure to make such repairs or replacements within said period after receipt of written notice from the District, we authorize the District to proceed to have said repairs or replacements made at our expense and we will pay the costs and charges therefore upon demand.

PROJECT: _____

LOCATION: _____

SIGNED: _____

ADDRESS: _____

PHONE: _____

DATE OF ACCEPTANCE: _____

PART 2 - PRODUCTS

2.01 MATERIALS

A. Trench Backfill

1. Native Material

- a. Native backfill material, if approved by the District, shall be used for backfill material.
- b. Native Backfill: Prepared as necessary to be non-expansive, free of debris, organic material and lumps larger than three (3) inches, rocks larger than two (2) inches,
- c. Unless otherwise specified in the Special Provisions, the Contractor has the option to use imported granular material for trench backfill in place of native material excavated at the work site.

1.) The optional use of imported granular material for trench backfill will be at the Contractor's expense.

2. Imported Soil

- a. Imported Backfill: Non-expansive soil, free of debris, organic material and lumps larger than three (3) inches, rocks larger than two (2) inches, with a liquid limit no greater than 40 and a plasticity index no greater than 15.

3. Graded Sand

- a. Graded sand backfill must be free from vegetable matter, lumps, balls of clay, or adherent films of clay, and must have a minimum Cleanliness Value of 60 as determined by California Test 227.
- b. The percentage composition by weight of graded sand must conform to the following gradations:

Sieve Size	Percentage Passing by Weight
9.5 mm (3/8")	100
4.75 mm (#4)	92-100
2.36 mm (#8)	90-100
1.18 mm (#16)	80-100
600 µm (#30)	65-100
300 µm (#50)	40-80
150 µm (#100)	0-40
75 µm (#200)	0-12

4. Crushed Rock or Gravel

- a. Crushed rock or gravel backfill material shall be graduated so that 100 percent will pass the 3/4 inch sieve and not more than 15 percent will pass the number 8 sieve.

- b. Clean crushed rock must have a minimum Cleanliness Value of 60 as determined by California Test 227. At least 75 percent of the crushed rock particles must have 2 or more fractured faces.

B. Woven Geotextile Fabric

1. The woven geotextile fabric must be a high modulus woven fabric consisting of long chain polymeric monofilaments, slit film tapes, or multifilaments of tape and nonwoven yarn of polypropylene, polyester or nylon, and must be inert to commonly encountered chemicals, rotproof and resistant to ultraviolet light exposures, insects, and rodents.
2. The fabric must be woven into a stable network and the edges of the fabric must be selvaged or surged in such a way that fabric will not unravel or fray during installation or usage.
3. The geotextile must conform to the physical property requirements as below:
 - a. Grab tensile strength (any direction), lb. ASTM D 4632 200 lbs.
 - b. Weight, oz/yd³ ASTM D 5261 6.0 oz/yd³
 - c. Permittivity, sec-1 ASTM D 4491 0.5 sec-1
 - d. Mullen Burst strength, psi ASTM D 3786 400 psi
 - e. The fabric must have an Equivalent Opening Size no larger than U.S. Standard Sieve Number 50 as determined by U.S. Corps of Landscape Architects Specification CW-02215.

C. Irrigation Pipe Sleeve

1. Irrigation Sleeve 4" and smaller shall be PVC Schedule 40 with solvent-weld joints.
 - a. Pipe shall be made from NSF approved Type I, Grade I, PVC compound conforming to ASTM resin specification D1785. All pipes shall meet requirements set forth in Federal Specification PS-21-70. (Solvent-weld Pipe)
2. Irrigation Sleeve 6" and larger shall be corrugated HDPE with smooth interior wall.
 - a. HDPE shall be made from high-density polyethylene with an integrally formed smooth interior conforming to AASHTO M252, AASHTO M294, Type S.

D. PVC Pipe and Fittings

1. Main Line Pressure Pipe and Fittings.
 - a. Pressure main line piping three (3) inch to two and one half (2-1/2) inch shall be PVC Class 315 and two (2) inch and smaller shall be PVC Schedule 40.
 - 1.) Main line fittings three (3) inch and smaller shall be PVC Schedule 80
 - b. All PVC pipe shall be marked continuously and permanently with the following information: Manufacturer's name, nominal pipe size, schedule or class of pipe, pressure rating in P.S.I. extrusion, NSF approval and date of extrusion.
 - c. All PVC fittings shall bear the manufacturer's name or trademark, material designation, size, applicable I.P.S. schedule and NSF seal of approval.

2. Lateral Non-Pressure Pipe and Fittings
 - a. PVC pipe 2-1/2 inch and larger shall be PVC Class 315.
 - b. PVC pipe 2 inch and smaller shall be PVC Schedule 40.
 - c. Pipe shall be made from NSF approved Type 1, Grade PVC compound conforming to ASTM resin specification 1785. All pipes shall meet requirements as set forth in Federal Specification PS-21-70. (Solvent-weld pipe).
 - d. Lateral pipe fittings downstream of remote-control valves shall be solvent welded PVC Schedule 40 unless otherwise noted in details and drawings.
- E. Concrete
 1. ASTM Class B concrete shall be used for fill concrete.
 2. Concrete shall have a 3,500-PSI compressive strength at 28 days and shall have maximum water to cement and dispersing agent ration of 56%. Concrete shall have a minimum cement content of 470 lbs. (5 bags) per cubic yard concrete. Nominal maximum size of coarse aggregate shall be three-quarter (3/4) inch.
- F. PVC Threaded Nipples:
 1. PVC Schedule 80 nipples shall be produced from extruded stock grade PVC compounds.
 - a. No molded nipples shall be used.
 - b. PVC Schedule 80 nipples shall be made from NSF approved PVC compound conforming to ASTM D1784, Cell Classification 12454
- G. Manual Valves
 1. Valves two (2) inch and smaller shall be bronze, full port ball valve with threaded ends.
 - a. Ball valves shall be equipped with a cast bronze cross or tee handle.
- H. Quick Coupling Valves
 1. Quick coupling valves shall have a brass two-piece body designed for working pressure of 150 P.S.I. operable with quick coupler key. Key size and type shall be as shown on the Drawings.
- I. Remote Control Valve
 1. Remote control valves shall be of the same type, manufacturer and model shown on drawings.
 2. Remote control valves shall be operated by a 2-wire decoder with a separate decoder address for each valve station and be of the same type, manufacturer and model as shown on the drawing.
 3. Remote control valves shall be labeled with a valve identification tags of the same type, manufacture and model shown on drawings.

J. Valve Identification

1. Remote control valve tags shall be of the same type, manufacturer and model shown on drawings.
2. Remote control valve tags shall be manufactured from polyurethane Behr Desopan, with a reinforced attachment hole and will be 2-1/4" x 2.3/4" in size.
 - a. Remote control valve identification tags shall be yellow in color with double sided stamped controller and valve designation.
 - b. Manual and remote-control valve identification tags shall be blue in color with double sided stamped "Non-Potable Water" on both sides.

B. Wiring

1. Two-wire cable shall be a twisted, solid-core wire suitable for direct burial, color-coded red and blue.
2. All connections in the two-wire path shall be made with 3M DBRY-6 waterproof connectors or approved equal.
3. Two-wire cable earth grounding shall be per manufacture's specifications.

C. Valve and Electric Boxes

1. Valve boxes shall be flush composite concrete with UV inhibitor with bolt down kit and a skid resistant marked surface.
2. Valve box lids shall be steel construction with diamond plated surface texture with a locked and secure improved wing design securely locking the cover in place from inside the enclosure.
 - a. Valve box lids shall come equipped with a vandal resistant security bolt and a specialized key to open.
 - b. Valve box lids shall have a welded identification plate attached by the manufacturer to say irrigation.

PART 3 - EXECUTION

3.01 GENERAL

- A. Appoint a competent resident superintendent to be onsite whenever the WORK is in progress. The superintendent shall not be replaced without notice to the Landscape Architect.
- B. Contractor is responsible for locating and avoiding underground utilities, for notifying all appropriate agencies prior to beginning excavation, and for any damage caused by Contractor. Contractor is required to notify Landscape Architect and the utility company should there be any damage to utilities.

3.02 SITE CONDITIONS

- A. Contractor shall protect all existing site development including, but not limited to, existing buildings, equipment, underground utilities, walls, materials, etc. Any existing site development damaged by willful or negligent acts of Contractor or any of Contractor's employees shall be replaced or repaired at no expense to District and in a manner satisfactory to Landscape Architect before Project acceptance is given. This provision applies to onsite damage as well as to that which may occur to adjacent properties
- B. All scaled dimensions are approximate. The Contractor shall check and verify all site dimensions and notify the District if site conditions have changed from those specified in the drawings.
- C. The Contractor shall check and verify all site water and electrical services and notify the District if site conditions have changed from those specified in the drawings.
- D. The Contractor shall carefully check all grades to satisfy him that he may safely proceed before starting work on the irrigation system.
- E. The contractor shall obtain permits and call for inspections as required by local codes and regulation. All installations shall conform to local codes and accepted construction practices.

3.03 PREPARATION

A. Physical Layout

- 1. Locations on Drawings are diagrammatic and approximate only and shall be changed and adjusted as necessary and as directed by the District to meet existing conditions and obtain complete water coverage.
- 2. Prior to installation, the Contractor shall stake out points of connection, power connections to controllers, location of mainlines, valve groupings and obtain review by the District before installation. The District prior to installation shall approve all layouts in writing. If equipment is incorrectly located without said approval, it is the Contractor's responsibility to relocate it as per the District's directions without additional cost.
- 3. Prior to installation in Soccer Fields, the Contractor shall stake out points of connection to main line, location of mainlines, valves groupings and sprinkler heads that define the corner layouts of the Soccer Field and obtain review by the District before installation.
- 4. The Contractor shall install and extend the system as shown on the Drawings, and as necessary to carry out the intent of the Drawings and Specifications.

3.03 WATER, ELECTRICAL AND TELEPHONE SERVICES

A. Water Supply

- 1. Coordinate with the District the irrigation water supply point of connection as indicated on the Drawings. Field verify connection location and size. The contractor is responsible for any changes caused by actual site conditions. Notify the District of any discrepancies prior to beginning construction.

B. Electrical Supply

1. Contractor shall provide all materials and connections to supply electrical power to the irrigation controller(s) and other electrical components as needed.
2. Connection shall be made at approximate location(s) as indicated on the Drawings. The Contractor is responsible for minor changes caused by actual site conditions and for the coordination of all electrical service connections to the controllers.
3. A licensed Electrical Contractor shall perform electrical work. Materials and workmanship for electrical service shall conform to the latest edition of the National Electric Code and local codes, ordinances and governing authorities having jurisdiction.

3.04 INSTALLATION

A. Trenching

1. Dig trenches straight and support pipe continuously on bottom of trench. Lay pipe to an even grade. Trenching excavation shall follow layout indicated on the Drawings and as noted.
2. Provide for twenty-four (24) inches cover for all pressure lines. Contractor shall be responsible to review Grading Plan to control depth of mainline.
3. Provide eighteen (18) inches cover for rotor and sprinklers on non-pressure lines.
4. Provide for a minimum of twelve (12) inches cover for drip manifolds on non-pressure lines.
5. Provide for twenty-four (24) inches cover for all control wiring.
6. Provide twenty-four (24) inches of cover for all pressure lines, non-pressure lines and control wiring under auto traffic areas.
7. Trench width shall be as needed to provide minimum horizontal clearance between pipes and minimum of four (4) inches of clearance between edge of pipes and edges of trench.
8. No pipe shall be laid directly over another pipe.

B. Backfilling

1. Excavate bottom of trench to uniform grade to achieve stable trench conditions and satisfactory compaction of foundation or bedding materials. Pipes must have firm, uniform bearing for the entire length of each pipeline. Wedging or blocking of pipe will not be permitted
2. Backfill lateral lines with approved backfill material. Backfill material shall be free from organic materials, large clods of earth or rocks larger than three (3) inches in diameter, trash, debris, rubbish, broken cement, asphalt material or other objectionable substances.
3. If settlement occurs and subsequent adjustments in pipe, valves, sprinklers heads, lawn or planting, or other construction are necessary, the Contractor will make all the required adjustments at Contractor's expense.

C. Trenching and Backfilling Under Paving

1. Trenches located under areas where paving, asphaltic concrete or concrete shall be installed, shall be backfilled with sand, a layer six (6) inches below the pipe and six (6) inches above the pipe and compacted in layers to 85% compaction, using manual or mechanical tamping devices. All trenches shall be left flush with the adjoining grade. The Contractor shall set in place; cap and pressure test all piping under paving prior to the paving work.
2. Generally piping under existing walks is done by jacking, boring or hydraulic driving, but where any cutting or breaking of sidewalks and/or concrete is necessary, it shall be done and replaced by the Contractor as part of the Contract cost. Permission to cut or break sidewalks and/or concrete shall be obtained from the District in writing. No hydraulic driving shall be permitted under concrete paving.

D. Sleeving

1. Sleeving shall be installed for irrigation pressure main line pipe, non-pressure lateral pipe and electrical wiring that crosses pavement, walkways, paths, mow curbs, concrete, and other hardscape elements as needed whether shown on drawing or not.
2. Install irrigation and electrical sleeving as needed whether indicated on the Drawings. Contractor shall coordinate the installation of sleeving with the work of other trades. Sleeving shall extend a minimum of six (6) inches past hardscape.
3. Sleeves shall be sized to easily accommodate piping and/or control wiring as called for in the drawings leaving a minimum of 25% void space inside sleeve.
 - a. The contractor shall be responsible to verify sleeving sizes based on field verification of pipe and wire crossings.
4. Separate sleeves shall be provided for:
 - a. Main line and lateral piping.
 - b. 120V/24V electric service
5. Sleeves shall have both ends capped during installation to prevent dirt and debris from entering the sleeve.
6. Identify location of sleeve ends from two permanent points of reference and mark on record drawings.
7. When utilizing existing sleeving, the contractor will remove existing pipe and wire and remove debris from sleeve prior to installing new irrigation components.

E. PVC Pipe

1. Routing of irrigation pipe as indicated on the Drawings is diagrammatic. Install lines, stub outs and valve manifolds to conform to the details shown on the drawings.
2. Install all assemblies specified herein in accordance with respective detail. In absence of detail Drawings or specifications pertaining to specific items required to complete work, provide shop drawing in accordance with best standard practice to Landscape Architect for review and approval prior to installation.

3. PVC pipe and fittings shall be thoroughly cleaned of dirt, dust and moisture before installation. Installation shall be as recommended by the pipe and fitting manufacturer.
 4. PVC pipe shall be installed so that there will be a small amount of excess length in the pipe to compensate for contraction and expansion of the pipe. This shall be accomplished by "snaking" the pipe in the trench during installation.
 5. Center load pipe with small amounts of backfill to prevent arching and slopping under pressure. Leave joints exposed for inspection during testing.
 6. No water shall be permitted in the pipe until inspections have been completed and a period of at least 24 hours has elapsed for solvent weld setting and curing.
 7. Plastic to metal connections shall be made with plastic male adapters and female metal adapter, hand tightened, plus one turn with a strap wrench. Teflon tape or approved equal shall be used on all threaded PVC to metal joints.
 8. Solvent Weld Joint: The Contractor must make solvent weld joints with non-synthetic bristle brush in the following sequence:
 - a. Apply a liberal, even coat of purple PVC primer to the pipe and fitting immediately before applying the solvent.
 - b. Apply a liberal even coat of solvent to the inside of the fitting and then to the outside of the pipe, making sure that the coated area is equal to the depth of the fitting socket. Section 20 - Landscaping 20.15 1/1/16 3.
 - c. Insert the pipe quickly into the fitting and turn the pipe approximately one-quarter (1/4) turn to distribute the solvent and remove air bubbles. Hold the joint for approximately fifteen (15) seconds so the fitting does not push off the pipe.
 - d. Use a clean rag and wipe off all excess solvent.
 - e. To prevent disturbing the last completed joint, the pipe must not be twisted when making subsequent joints.
 - f. Allow at least fifteen (15) minutes setup time for each welded joint before moving.
 9. Threaded joints shall be wrapped with Teflon tape as per manufacturer's instructions.
 10. Flush all debris out of pipe prior to installing valves and heads.
 11. Install detectable marking tape 12" above main line pipe along the entire length of the main line run, including main line branches and irrigation crossover sleeves.
 12. When utilizing existing main line, make connections to new main line using long-barrel self-restraint repair couplers.
- F. Line Clearance
1. Irrigation lines shall have a minimum horizontal and vertical clearance of four (4) inches from each other. Parallel lines shall not be installed directly over one another.

2. Horizontal and vertical clearance of irrigation lines from lines from other trades shall be as per local codes and regulations.
3. Line clearances shall be inspected and approved by the District prior to backfilling trenches.

G. Quick Coupler Valve

1. Install as quick coupler valve as per details and manufacturer's specifications.
2. Install where shown on Drawings. Locate, in valve boxes, twelve (12) inches from walk, curb, header board, etc., for easy access unless otherwise noted on drawings.
3. Install one quick coupler valve per valve box. Provide extension units as required as per details. Install valve boxes in shrub planting areas whenever possible.
4. Install a T. Christy I.D. water quality tag on all gate valves. Attach the identification tags to the valve stem using a nylon cable tie.
5. It is the intent of the irrigation design to minimize valve boxes within the soccer field area. When valve boxes are required to be installed in the soccer field, the contractor shall submit proposed locations to Landscape Architect to review and approve prior to installation

H. Valve Boxes

1. Install valve boxes in shrub planter areas wherever possible.
2. Install valve boxes in groupings as shown to facilitate long-term maintenance. Contractor to stake out dimensions of each valve box bank location for review and approval by Landscape Architect prior to installation.
3. Install valve boxes as per details unless otherwise noted on plans.
4. It is the intent of the irrigation design to minimize valve boxes within the soccer field area. When valve boxes are required to be installed in the soccer field, the contractor shall submit proposed locations to Landscape Architect to review and approve prior to installation

I. Drip Rings

1. Install drip rings as detailed on the Drawings.
2. Flush drip lines of debris prior to pressurizing.
3. Secure drip tubing to ground using size (6) inch U-PINS at three (3) feet on center and at each fitting.
4. Install drip lines below fabric and decomposed granite.
5. Secure root ball emitter to top of root ball using two (2) U-PINS in crisscross fashion at approximately one-half (1/2) the width of the root ball.

3.05 SYSTEM ADJUSTMENT

- A. The Contractor shall flush and adjust irrigation for optimum performance.
- B. If it is determined that any irrigation equipment is improperly installed, the contractor shall reinstall the equipment to conform to construction documents.

3.06 TESTING OF THE IRRIGATION SYSTEM

- A. The Contractor shall request the presence of the Landscape Architect at least two (2) working days in advance of testing and as noted below.
 - 1. Dripline layout and staking prior to fabric and decomposed granite installation.
 - 2. Drip Coverage Test shall be performed after the dripline is installed and before fabric and decomposed granite is installed. The drip coverage test shall be operated long enough to see the wetted pattern of the emitters.
 - 3. Furnish all materials and perform all work required to correct any inadequacies of coverage due to deviations from the Drawings or where the system has been willfully installed as indicated on the Drawings, when it is obviously inadequate without bringing this to the attention of the District.
 - 4. The sprinkler coverage test shall be completed and approved before landscape material is planted.

3.07 TEMPORARY REPAIRS

- A. The District reserves the right to make temporary repairs as necessary to keep the irrigation system in operating condition. The exercise of this right shall not relieve the Contractor of his responsibilities under the terms of the guarantee as herein specified.

3.08 MAINTENANCE

Provide maintenance as per SECTION 02970 - **LANDSCAPE MAINTENANCE**.

3.10 CLEAN-UP

Clean up shall be made as each portion of work progresses. Refuse and excess dirt shall be removed from site. All walks and paving shall be broomed or washed down, and any damage sustained to the work of others shall be repaired to original conditions acceptable to the District.

3.11 OBSERVATION PRIOR TO FINAL ACCEPTANCE

- A. The Contractor shall operate each system in its entirety for the Landscape Architect at time of final observation. Any items deemed not acceptable shall be reworked to the complete satisfaction of the Landscape Architect.
- B. The Contractor shall show evidence to the Landscape Architect that the District has received all accessories, Record Drawings and equipment as required before final observation can occur.

3.12 INSPECTION SCHEDULE

- A. The Contractor shall be responsible for notifying the Landscape Architect in advance for the following observations according to the time indicated:
 - 1. Staking points of connection – two (2) working days
 - 2. Dripline layout and coverage test - two (2) working days
- 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 Landscape Architect at his current billing rates per hour, plus transportation costs.
- C. Normal progress observations shall be requested by the Contractor from the Landscape Architect as per observations listed in specifications SECTION 02905 - **LANDSCAPE INSTALLATION**.
- D. No final observation shall commence without Record Drawings. In the event the Contractor calls for an observation without Record Drawings, without completing previously noted corrections or without preparing the system for observations, he shall be responsible for reimbursing the District at the hourly rate in effect at the time of the observation (plus transportation costs) for the inconvenience. No further observations will be scheduled until this charge has been paid.

3.13 FINAL TEST

A final test of the irrigation system shall be made in the presence of the Landscape Architect at the end of the landscape maintenance period. The system will be accepted only when the entire system performs as set forth on the drawings and specifications and all contract documentation has been received and approved.

A. CLOSE OUT DOCUMENTS

- 1. Record Drawings: The Contractor must maintain neat and accurate record drawings in conformance with these specifications.
 - a. Drawings shall be subject to the inspection of the Landscape Architect and the District at all times and must be kept current with all work instructions, change orders, substitutions, and construction adjustments shown thereon and initialed by the inspector.
 - b. Immediately following the start of the Plant Establishment Period, the Contractor must submit to the Landscape Architect one (1) full size set of Record Drawings.
 - c. Record drawings will be reviewed by the Landscape Architect and shall be returned to the Contractor with comments for revisions, if necessary.
 - d. Notes and dimensions must be drafted on the record drawings in a neat and legible manner. Drawings must be of sufficient quality to allow further black and white reproduction of the original to be clear.

- e. Illegible, inaccurate, or incomplete record drawings will be returned to the Contractor for revisions.
 - f. The work will not be formally accepted until the Record Drawings are approved by the Landscape Architect. Upon approval by the Landscape Architect, two (2) bond sets of record drawings must be delivered to the District in good and acceptable condition prior to final acceptance of the Work.
2. Equipment to be Furnished: The Contractor must deliver all tools and equipment called for on the plans and described herein to the District.
- a. One Hundred (100) feet of drip tubing for each type used.
 - b. Ten (10) drip emitters for each type used
3. System Walkthrough: After the system has been installed and approved and close out documents have been received by the District, the Contractor shall schedule an onsite system walkthrough with the District. The system walkthrough shall cover the following:
- a. Valve location for each system installed
 - b. Maintenance requirements for dripline installation

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
 - 3. Cobble Swale
 - 4. Planting
 - 5. Fertilizer
 - 6. Tree Staking
 - 5. Hydroseeding
 - 6. Sodding
 - 7. Clean-up
- B. Related Work Specified in Other Sections
 - 1. SECTION 02260 - **LANDSCAPE GRADING**
 - 2. SECTION 02811 - **IRRIGATION**
 - 3. SECTION 02970 - **LANDSCAPE MAINTENANCE**

1.03 QUALITY ASSURANCE

- A. Source Quality Control
 - 1. Submit documentation to the District 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 District at time of submission.

2. Plants shall be subject to observation and approval of the District 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 District, 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.
7. Protect plant material during delivery to prevent damage to root ball or desiccation of leaves.
8. The Contractor shall notify the District 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 and maintenance period.

1.06 SAMPLES AND TESTS

- A. The District 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 District. 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. Contractor shall submit sample of cobble and weed barrier fabric to Landscape Architect for approval prior to installation.
- C. Soil analysis for turf and planter area south of soccer fields. An analysis has already been done for the soccer fields with amendments in section 3.03. Three samples area to be taken from the remaining planting areas. Submit to Sunland Analytical Lab (916) 852-8557. Ltp 4 analysis to be done for each soil sample.

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 maintenance period shall be replaced immediately. The District 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 District 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 GroLife Mycorrhizal Inoculum / Soil Conditioner

D. Imported Soil

1. Imported soil shall be obtained from a source approved by the Landscape Architect.
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 Landscape Architect for approval prior to delivery of any soil to the project site. Should the Landscape Architect 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 Landscape Architect 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 "Standard 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 and County 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 District, 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

<u>SIZE</u>	<u>TYPE</u>	<u>EXAMPLE</u>	<u>HEIGHT</u>	<u>SPREAD</u>	<u>CALIPER</u>
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 District.
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 District 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.

I. Hydro-Seed Mix

1. Seed mix shall be as specified on the Drawings.

2. Seed shall be weed free, fresh, re-cleaned, Grade A, new crop consisting of the percentages of mix as specified. Seed shall be labeled in accordance with the U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act presently in effect.

3. Seed shall be provided from and mixed by a certified dealer. Seed mixture shall be labeled with manufacturer's guaranteed analysis, germination rate and purity rate.

J. Wood Cellulose Fiber Mulch (Hydromulching)

1. Mulch shall be especially prepared wood cellulose fibers with no growth or gemination inhibiting factors, and dyed green to facilitate visual metering during application. Mulch shall be equal to Silva-Fiber as manufactured by Weyerhauser Company, Tacoma, Washington. Wood cellulose fiber shall have additional characteristics of dispersing rapidly in water to form a homo-geneous slurry and remain in such state when agitated in the hydraulic mulching unit.

2. When applied, the wood cellulose fiber must form an absorptive mat but not a plant inhibiting membrane, which will allow moisture to percolate into the underlying soil. The wood cellulose fiber mulch shall be supplied compressed in packages containing

fifty (50) pounds of material having an equilibrium air dry moisture content at time of manufacture of 12% plus or minus 2.

K. Binders

1. "AM-TAC" (AZ-TAC Products, Inc.) tackifier to bind fiber mulch to prevent erosion.

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 Landscape Architect - 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. Miscellaneous Materials

1. Sand: wash river sand or equal.
2. Tree wound paint: as approved. Morrison Tree Seal, Cabot Tree Paint, or approved equal.

P. Cobble Swale

1. 4 to 6-inch river cobble
2. 10ml weed barrier fabric

PART 3 - EXECUTION

3.01 OBSERVATION

The District to verify that final grades have been established prior to beginning planting operations. The District 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 Landscape Architect. 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 Landscape Architect. If an underground construction or utility line is discovered prior to work, other locations for planting may be selected by the Landscape Architect.

3.03 INSTALLATION

A. Preparation of planting areas excluding hydroseed areas:

- 1. After approximate finished grades have been established, soil shall be conditioned and fertilized in the following manner. Soil conditioner shall, at the following rate, be uniformly spread and cultivated thoroughly by means of mechanical tiller into the top six (6) inches of soil.

Soccer Fields:

- a. Twenty one (21) pounds of NPK6-20-20 per 1,000 square feet.
- b. Three (3) cubic yards of nitrogen stabilized shavings per 1,000 square feet.
- c. One half (0.5) pound zinc sulfate per 1,000 square feet.
- d. Two (2) pounds ammonium sulfate per 1,000 square feet.

All other planters:

- a. Amend per soil analysis in section 1.06 samples analysis test.

- 2. All soil areas shall be compacted and settled by application of heavy irrigation to a minimum depth of twelve (12) inches.
- 3. 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
 - c. Sod areas: 1-1/2 inches
 - d. Hydroseed areas: 1/2 inch
- 3. Surface drainage shall be away from all building foundations, where applicable.
- 4. Dispose of excess soil on site per direction of Landscape Architect.

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 District.
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 District. If an underground construction or utility line is discovered prior to work, other locations for planting may be selected by the District.

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 spread nearby on site as directed by Landscape Architect.
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. 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.
6. 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.
7. Center plant in pit.
8. Face plants with fullest growth into prevailing wind.
9. Set plant plumb and hold rigidly in position until soil has been tamped firmly around ball roots.
10. 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
11. 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.
12. 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
13. The remainder of the hole shall be backfilled.
14. 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.
15. 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 District, 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. Prune as per specifications SECTION 02970 - LANDSCAPE MAINTENANCE.

16. 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 District 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. 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.

F. 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 maintenance period.

G. 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 District in advance for the following observations according to the time indicated:

1. Pre-construction conference - 7 days.
2. Rough grade review - 48 hours.
3. Irrigation coverage test - 48 hours.
4. Finish grade review - 48 hours.
5. Plant material review - 48 hours.
6. Plant layout review - 48 hours.
7. 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.
8. End of landscape installation - 48 hours.
9. End of landscape maintenance/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 District 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 District.

3.07 LANDSCAPE MAINTENANCE

Provide Landscape Maintenance as per SECTION 02970 - **LANDSCAPE MAINTENANCE.**

END OF SECTION

SECTION OF 02970

LANDSCAPE MAINTENANCE

PART 1 - 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 required to maintain landscape in a healthy growing condition and in a neat and attractive appearance throughout the maintenance period.

- B. Related Work Specified in Other Sections:

- 1. SECTION 02811 - IRRIGATION SYSTEM
- 2. SECTION 02905 - LANDSCAPE INSTALLATION

1.03 QUALITY ASSURANCE

The Maintenance Contractor shall be experienced in horticulture and landscape maintenance, practices and techniques, and shall provide sufficient number of workers with adequate equipment to perform the work during the maintenance period.

1.04 MAINTENANCE PERIOD

- A. Continuously maintain the entire project area during the progress of the work and during the sixty (60) calendar-day, maintenance period or until final acceptance of the project by the District.
- B. Maintenance period shall not start until all elements of construction, planting and irrigation for the entire project are in accordance with Plans and Specifications. A prime requirement is that all hydroseeded areas shall be planted and shall show an even, healthy growth. If such criteria is met to the satisfaction of the District, a written notification shall be issued to establish the effective beginning date of maintenance period.
- C. Any day of improper maintenance, as determined by the District, shall not be credited as an acceptable maintenance period day. The maintenance period shall be extended on a daily basis if the work is not in accordance to the Plans and Specifications. Project shall not be segmented into maintenance areas or phases, unless authorization of the District is obtained.
- D. Maintenance shall continue beyond the sixty (60) day maintenance period, as required, until final acceptance is given by the District.

1.05 GUARANTEE AND REPLACEMENT

- A. Guarantee: All plant material and other materials installed under the Contract shall be guaranteed for one (1) year from time of final acceptance against any and all poor, inadequate

or inferior materials and/or workmanship or improper maintenance, as determined by the District, 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 maintenance period shall be replaced immediately. The District shall be sole judge as to the condition of material. Material to be replaced within the guarantee period shall be replaced by the Contractor within five (5) days of written notification by the District. All replacement materials and installations shall comply to the Plans and Specifications. Any plant missing due to suspected theft shall be replaced by the Contractor. If the Contractor suspects that theft may be a problem, the Contractor shall provide written documentation to the District that security on this site needs to be intensified. The Contractor may relieve himself of theft responsibility if after the security notice, with no result, a written notice to the District shall be given that plant material will not be replaced for theft or vandalism due to lack of site security being maintained. This procedure may take place only during the Landscape Maintenance Period.

1.06 OBSERVATION SCHEDULE

Normal progress observations shall be requested by the Contractor from the District as per observations listed in specifications SECTION 02905 - LANDSCAPE INSTALLATION.

1.07 FINAL ACCEPTANCE OF THE PROJECT

- A. Upon completion of all project work, including maintenance period, the District will, upon proper request, make an observation to determine final project acceptability.
- B. Where observed work does not comply with the Plans and Specifications, replace rejected work and continue specified maintenance period until re-inspected by the District and determined to be acceptable. All replacement materials and installations shall be in accordance with the Plans and Specifications. Remove rejected work and materials immediately from project. Prior to the date of final observation, Contractor shall provide the District with all Record Drawings and written Guarantee Statement in accordance with the Plans and Specifications.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All materials used shall either conform to Specifications in other sections or shall otherwise be acceptable to the District. The District shall be given a monthly record of all herbicides, insecticides and disease control chemicals used.

- B. Turf maintenance fertilizer: shall consist of the following percents by weight:

- 16% nitrogen
- 16% phosphoric acid
- 8% potash

- C. Sulfate – Sulfur (Ammonium Sulfate): shall consist of the following percents by weight:

- 21% nitrogen
- 0% phosphorus

0% potassium

PART 3 - EXECUTION

3.01 MAINTENANCE

- A. General: Proper maintenance, including watering, weeding, mowing, edging, fertilization, repairing and protection shall be required until entire project is finally accepted, but in any event for a period of not less than the specified maintenance period after planting.
- B. Watering: Thoroughly water to insure vigorous and healthy growth until work is accepted. Water in a manner to prevent erosion due to application of excessive quantities of water. When hand watering use a water wand to break the water force.
- C. Weeding: Keep plant basins and areas between plants free of weeds. Control weeds with pre-emergent herbicides. If weeds develop, use legally approved herbicides. Avoid frequent soil cultivation that destroys shallow roots. Weeding also shall be included in all paved areas including public or private sidewalks.
- D. Pruning
 - 1. Trees: 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 District.
 - 2. Shrubs: Same objectives as for trees. Shrubs shall not be clipped into balled boxed forms unless such is required by the landscape plans. All pruning cuts shall be made to lateral branches, buds or flush with the trunk. "Stubbing" and "heading" shall not be permitted.
 - 3. Only skilled workmen shall perform pruning work in accordance with standard horticultural pruning practices. Remove from the project all pruned branches and material. Remove and replace any plant material excessively pruned or malformed resulting from improper pruning practices at no additional costs to the District.
- E. Staking and Guying: Stakes and guys shall remain in place through the guarantee period (one year) and shall be inspected and adjusted to prevent rubbing that causes bark wounds.
- F. Insect, Animal, Rodent and Disease Control: Maintain proper control with legally approved materials as required as part of the Contract.
- G. Protection: The Contractor shall maintain protection of the planted areas. Damaged areas shall be repaired or replaced at the Contractor's expense.
- H. Trash: Remove trash weekly in all planted areas, pedestrian walkways and plazas.
- I. Replacement: As per Guarantee and Replacement Specifications of this Section.

3.02 MAINTENANCE FERTILIZATION

Apply five (5) pounds of Ammonium Sulfate (21-0-0) per 1,000 square foot every month until plant become established. After established, apply 28-3-4 (or similar preparation) to provide healthy growth rate and color.

3.03 HYDROSEED MAINTENANCE

- A. Watering: Lawns shall be watered at such frequency as weather conditions require to replenish soil moisture below root zone and to establish healthy strands of grass.
- C. Weed Control: If needed, control broad leaf weeds with selective, legally approved herbicides.
- D. Fungicide: Apply fungicide to all turf areas throughout maintenance period as required to prevent fungus. Apply as per manufacturer's specifications.
- F. Replacement: At conclusion of maintenance period a final observation of lawn and turf areas shall be made. Remove diseased areas and unhealthy strands of grass from the site; do not bury into the soil. Replant areas with materials and in a manner as specified on the Plans and Specifications at no additional cost to the District.

3.03 IRRIGATION SYSTEM

- A. System Observation: The Contractor shall check all systems for proper operation. Lateral lines shall be flushed out. Root ball drip emitters are to be adjusted as necessary for unimpeded coverage.
- B. Repairs: Repair all damages to irrigation system at the Contractor's expense. Repairs shall be made within twenty-four (24) hours.

END OF SECTION

SECTION 05500

METAL FABRICATION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work includes, but is not limited to the following:

1. Furnish all labor, material, and equipment as required to fabricate and install all items made from iron and steel shapes, plates, bars, strips, tubes, pipes, and castings as indicated on the drawings and/or herein specified in this section
2. 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.
3. Provide shop drawings, as required, for all metal fabrication work.
4. Completely coordinate with work of all other trades.
5. Provide all metal, metal fabrications, and miscellaneous items and work required for the following items:
 - a. Steel Handrails
 - b. Steel Shade Structure
 - c. All miscellaneous metal fabrications and fasteners as indicated on drawings

B. Related Work described elsewhere

1. SECTION 02515 – SITE CONCRETE
2. SECTION 10530 – SPECIALTIES – PROTECTIVE COVERS

1.02 REFERENCES

- A. AISC: Standard Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings by the American Institute of Erection of Structural Steel for Buildings by the American Institute of Steel Constructions (AISC).
- B. AISC: Code of Standard Practice for Steel Buildings and Bridges.
- C. AWS: Code for Structural Welding by the American Welding Society (AWS)
- D. ASTM A-36: Structural Steel
- E. ASTM A-53: Black and Hot-Dipped Zinc-Coated Welded and Seamless Steel Pipe
- F. ASTM A-120: Black and Hot-Dipped Zinc-Coated Welded and Seamless Steel Pipe
- G. ASTM A-307: Low- Carbon Steel Externally and Internally Threaded Fasteners

- H. ASTM A-325: High Strength Bolts for Structural Steel Joints.
- I. ASTM A-500: Cold-formed and Welded and Seamless Carbon Steel Structural Steel Tubing in Rounds and Shapes.
- J. ASTM A-501: Hot-formed Welded and Seamless Carbon Steel Tubing.

1.03 SHOP DRAWINGS

- A. Indicate component details, materials and sizes, finish, connection and joining methods, and the relationship to adjoining work.
- B. Indicate which structural metal units, members or brackets require field cuts or welds due to construction techniques.
- C. Indicate metal fabricators method for radius form bends of pipe or tubing.
- D. Indicate welded connections using standard AWS welding symbols. Indicate net weld lengths

1.04 QUALITY ASSURANCE

- A. Certification: Before Fabrication furnish a mill certified report (in Duplicate) of the tests for each heat of steel or iron from which the material is to be fabricated, containing the results of chemical and physical tests required by the ASTM specifications for the materials.
- B. Qualify welding processes and welding operators in accordance with AWS "Standard Qualification Procedure". Provide certification that welders to be employed in work have satisfactorily passed AWS qualification tests within the previous twelve (12) months. If recertification of welders is required, re-testing will be the Contractor's responsibility.
- C. Work shall comply with The Drawings, Specifications and approved Shop Drawings in every aspect. All errors of fabrication and connections, defective materials, fasteners, and workmanship shall be replaced at the expense of the contractor.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver anchor bolts and anchorage devices, which are to be embedded in cast-in-place concrete or masonry in ample time so as not to delay that work.
- B. Store Materials to permit easy access for observation and identification. Keep steel members off the ground using pallets, platforms or other supports. Protect steel members and packaged materials from corrosion and deterioration. Remove any damaged items from the site and replace at no cost to the District.
- C. Contractor shall furnish the articles, equipment, materials, or processes specified by name in the Drawings and Specifications. Product names are used as standards only; other materials or methods shall not be used unless approved in writing by the District. Burden of proof as to equality of any proposed material shall be on the Contractor; the District's decision is final. Only one request for substitution shall be considered for each item. Equipment capacities specified are minimum acceptable.

1.06 COORDINATION

Coordinate and furnish all required anchorages, templates and patterns, setting drawings, and installation of all built-in items. Supervise the proper location and installation of all built-in items. Deliver all items required to be imbedded in concrete, masonry or built into other material to their respective Contractor. Provide holes and connections for work of other Contractors.

1.07 FIELD MEASUREMENTS

Take field measurements prior to preparation of Shop Drawings and metal fabrication. Proper fit and attachment of all items is required; allow for trimming and fitting when taking field measurements before metal fabrication.

1.08 SHOP ASSEMBLY

Pre-assemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for re-assembly and coordinated installation.

PART 2 – PRODUCTS

2.01 GENERAL

- A. Use materials the same size and thickness indicated or, if not as indicated, as required to produce strength and durability in finished product for use as intended.
- B. Metal surfaces used for fabrication of miscellaneous metal items which will be exposed to view shall be smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.

2.02 STEEL PLATES, SHAPES AND BARS

All miscellaneous steel shall be standard cold-rolled sections conforming to ASTM A-36

2.03 STEEL PIPE

- A. All steel pipe shall be black steel pipe, except where indicated to be galvanized, complying with the provisions of:
 - 1. ASTM A-120, Schedule 40 for pipe less than four (4) inch diameter
 - 2. AST A-53 ERW for pipe greater than four (4) inch diameter

2.04 STEEL TUBING

All steel tubing shall be cold-formed steel tubing conforming to ASTM A-500, Grade B.

2.05 FASTENERS

- A. General: Provide electro-zinc plated fasteners for exterior use or where built into exterior walls or slabs. Select fasteners for the type, grade and class specified.

- B. Bolts and Nuts: Regular hexagon-head carbon steel type conforming to ASTM a-307, grade A with electro-zinc plating.
- C. Flat Washers: U.S.S. standard round carbon steel type conforming to FS FF-W-92 with electro-zinc plating.
- D. Lock Washers: Helical spring carbon steel type conforming to FS FF-W-84 with electro-zinc plating.
- E. Anchor Bolts: Non-headed "J" bolt type, unless otherwise indicated on Drawings, conforming to ASTM A-307, Grade A with electro-zinc plating.

2.06 SHOP PAINT

Primer shall be Rust Inhibiting Primer, conforming to Federal Specification TT-P-31 for steel surfaces and Federal Specification TT-P-64b for galvanized surfaces.

2.07 GROUT

Pre-mixed, factory packaged, non-shrinking, non-metallic, non-staining, non-corrosive, and non-gaseous grout complying with the CE CRD-C588, provide grout specifically manufactured for exterior applications.

PART 3 – EXECUTION

3.01 GENERAL

- A. Comply with AISC Code and Specifications and maintain Work in safe and stable conditions during erection. Provide temporary bracing and shoring as required; remove when final connections are in place.
- B. Execute all work using skilled metal workers only. Do all welding as per AWS Specifications with certified welders.
- C. When possible, fit and shop assemble all metal work, ready for installation, with shop and field connections welded or attached with fasteners as indicated on drawings.

3.02 FABRICATION

A. General

1. Use materials the size and thickness indicated on drawings or approved on shop drawings to produce strength and durability in finished product for use as intended. Work to dimensions as indicated on drawings or approved on shop drawings, using proven details of fabrication and support.
2. All fabrication shall be in accordance with the AISC Specifications for fabrication of structural steel.
3. Do not field cut or alter structural metal units, members or brackets without approved shop drawings.
4. Fabricate exposed work true to line, shape and level with accurate angles and radiuses. Ease exposed metal edges to a radius of approximately 1/32 inch.

5. Make cuts, bends, punching and drilling accurate, neat and properly located. Grind and file smooth all parts exposed to view; leave exposed surfaces free of fabrication marks. Mark and match mark units requiring field assembly.
6. All welds shall be continuous, unless otherwise indicated, complying with AWS Specifications. Form exposed connections with tight, flush and smooth hairline joints. Grind exposed welds smooth and flush to match and blend with adjoining surfaces.
7. Cut, reinforce, drill and tap fabricated metal work as indicated on drawings to receive finish hardware, fasteners and similar items.

3.03 SHOP PAINTING

- A. Shop paint all metal work, except members or portions of members to be embedded in concrete or masonry, surfaces and edges to be field welded, and galvanized surfaces, unless otherwise indicated.
- B. Clean all metal work to be primed and painted
- C. Immediately after surface preparation brush or spray on primer in accordance with the manufacturer's instruction at a rate to provide uniform dry film thickness of 2.0 mils for each coat. Use painting methods, which will result in full coverage of joints, corners, edges and exposed surfaces.
- D. Apply one (1) shop coat to fabricated metal items, except apply two (2) coats of primer to surfaces inaccessible after assembly or installation.

3.04 INSTALLATION

- A. General
 1. Install all metal work in accordance with approved Shop Drawings
 2. Install all work square and level and free from distortion or defects detrimental to appearance or performance.
 3. Splice metal work only where indicated and approved on shop drawings
 4. Install anchorage devices and fasteners where required for securing miscellaneous metal fabrications to in place construction; including anchorage devices and fasteners that require to be cast into concrete or masonry. Provide temporary bracing or anchors in formwork for items cast into concrete or similar construction.
 5. Perform cutting, drilling, and fitting required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment and elevation. Install items plumb, level, true and free of rack; measured from established lines and levels.
 6. Fit exposed connections accurately together to form tight hairline joints. Weld connections that are not to be left as exposed joints, but cannot be shop welded due to shipping size limitations. Grind exposed joints smooth and touch up shop paint coat.

7. Do not weld, cut, or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.
8. All field welds shall conform to AWS Specifications. Grind all exposed welds and scratches with shop paint as specified.

END OF SECTION

SECTION 10530

SPECIALTIES MANUFACTURER OF PROTECTIVE COVERS

PART 1 - GENERAL

1.01 DESCRIPTION OF PRODUCT

- A. Shelter Type: 60' x 46' Monoslope Style shelter with Standing Seam over Tongue and Groove Roof Deck.
- B. Roof Slope: $\approx 2.5:12$
- C. Clear height under Tie Beam (UTB): 11'-6". This is the clearance to the stage under the tie beam which spans between the columns.

1.02 REFERENCES

A. REFERENCED STANDARDS

- 2. AISC – American Institute of Steel Construction
 - a. AISC Steel Construction Manual – 14th edition
 - b. AISC 360-10 Specification for Structural Steel Buildings
- 3. ASTM – American Society for Testing and Materials
 - a. ASTM A36/A36M – Standard Specification for Carbon Structural Steel; 2008
 - b. ASTM A325 – Standard Specification for Structural Steel Bolts, Heat Treated, 120/105 ksi Minimum Tensile Strength; 2010
 - c. ASTM A563 – Standard Specification for Carbon and Alloy Steel Nuts; 2007a
 - d. ASTM A500 – Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2010a
 - e. ASTM A653/A653M – Standard Specification for Sheet Steel, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvanealed) by the Hot Dip Process; 2010
 - f. ASTM A792/A792M – Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy Coated by the Hot-Dip Process; 2010
 - g. ASTM F1554 – Standard Specification for Anchor Bolts, Steel, 36, 50 and 105 ksi Yield Strength; 2007a
- 4. AWS – American Welding Society
 - a. D1.1
 - b. D1.3
 - c. D1.8
- 5. OSHA – Occupational Safety and Health Administration
 - a. Steel Erection Standard 29 CFR 1926.750 Part R
- 6. SSPC – Steel Structures Painting Council
 - a. SSPC-SP 2 – Hand Tool Cleaning; 2004
 - b. SSPC-SP 10/NACE No. 2 – Near White Blast Cleaning; 2007

7. LEED – Leadership in Energy and Environmental Design
8. ISO – International Organization for Standardization

1.03 SYSTEM DESCRIPTION

- A. The structure shall be a pre-engineered package and shall be shipped as a pre-cut (excluding standing seam roof panels) and pre-fabricated package that shall include the structural framing members, roof panels, fasteners and roof trim as well as job specific installation instructions. The structure will be shipped in an un-assembled package for ease of shipment and minimum shipping charges.

1.04 SUBMITTALS

- A. Submit a minimum of four (4) sets of submittal drawings and (2) sets of structural calculations signed and sealed by a Professional Engineer licensed in the state of California.

1. Submit a minimum of four (4) sets of submittal drawings and (2) sets of structural calculations signed and sealed by a Professional Engineer licensed in the state of California.

B. PRODUCT DESIGN REQUIREMENTS:

1. The structure shall meet the following design requirements
 - a. Building Code: 2019 California Building Code
 - b. Ground Snow Load: 20p.s.f.
 - c. Live Load: 20 p.s.f.
 - d. Wind Speed: 115 m.p.h. Exp “C”
 - e. Seismic Design Category: D

C. SUBMITTAL REQUIREMENTS

1. Calculations:
 - a. Design according to the requirements of the national, state or local building codes as indicated in Section 1.04.B.
 - b. Calculations shall include all member design for each different member type.
 - c. Connection design for each different connection that will determine the design of the bolts, welds, plate thickness and anchorage to the foundation.
 - d. Foundation design shall be for the loads applied, not a generic foundation design, while taking into account all soils information.
2. Submittal Drawings:
 - a. Anchor bolt layout with all appropriate dimensions for installation.
 - b. Site specific foundation design.
 - c. Isometric as well as elevation and plan views of the framing members along with the member sizes and locations indicated on the drawings.
 - d. Connection details for every connection on the frame.
 - e. Roof panel connections and trim installation details.
 - f. All accessories on the structure shall have an installation detail as well as connection details.

D. FOUNDATION DESIGN

1. The foundation design shall be supplied by the manufacturer.
2. Anchor bolts shall be supplied by the manufacturer.
3. Foundation materials and labor shall be provided by the structure contractor.
4. Owner should provide site specific soils information for proper foundation design, if that data is not provided the foundation will be design for the minimum soil values allowed by code.

1.05 QUALITY ASSURANCE

A. MANUFACTURER QUALIFICATIONS

1. The product shall be designed, engineered and fabricated at a facility operated and directly supervised by the manufacturer.
2. The manufacturer shall have a minimum of 10 years in steel shelter fabrication.
3. Full Time on Staff Quality Assurance Manager.
4. All welders must be AWS certified for welding steel structures.
5. Membership in the American Welding Society (AWS).
6. Membership in the American Institute of Steel Construction (AISC).
7. Full Time on Staff Licensed Engineer.
8. Published Quality Control System manual.
9. Quality Control System must pass an annual audit by a Third Part Agency.
10. ISO 9001 certification for Powder Coating System.

B. MANUFACTURER'S CERTIFICATIONS

1. Clark County, NV Approved Fabricator.
2. City of Riverside, CA Approved Fabricator.
3. City of Houston, TX Approved Fabricator Structural Steel.

1.06 FIELD OR SITE CONDITIONS

A. Foundations shall be installed per the ICON installation drawings.

1. All foundations shall be cast at the same elevation unless specifically noted on the ICON installation drawings.

B. Anchor bolts shall be placed in the foundation as per the ICON installation drawings utilizing the anchor bolt template supplied with the anchor bolts.

1. Anchor bolts shall be installed per the dimensions and orientation shown on the drawings.

1.07 MANUFACTURER WARRANTY

A. Shelter shall have a 10-year limited warranty on the steel framing members.

B. Shelter shall have a 10-year limited warranty on the powder-coated elements.

- C. For all Metal Roofing there will be a pass-through warranty direct from the metal Roofing supplier, warranty shall be provided on request.

PART 2 – PRODUCTS

2.01 SHELTER SYSTEM AND MATERIALS

A. Manufacturers:

1. Acceptable Manufacturer: ICON Shelter Systems, Inc., 1455 Lincoln Rd., Holland, MI, 49423. Email: info@iconshelters.com, Website: www.iconshelters.com.
2. Pricing for this specific project and specified shelter can be requested from:
 - a. Park Planet
1555 Tahoe Court
Redding, CA 96003
530-244-6116
3. The product shall be designed and fabricated at a facility operated and directly supervised by the manufacturer.

B. SUBSTITUTION LIMITATIONS:

1. Substitutions must be approved a minimum of ten (10) business days prior to bid. All approved manufacturers shall be notified on writing before the bid date and shall not be allowed to bid without written notification. Any approval of an alternate manufacturer shall be through and official bid addendum prior to the bid date.
2. Alternate suppliers shall meet the requirements, qualifications and provide proof of certifications listed under Section 1.05 QUALITY ASSURANCE.
3. Alternate suppliers shall provide documentation that the power-coat system being provided meets or exceeds the ICON supplied powder-coat system listed under Section 2.01(c)(8).

C. PRODUCT REQUIREMENTS AND MATERIALS:

1. GENERAL:

- a. The pre-engineered and pre-fabricated package of parts shall be pre-cut and packaged unless noted otherwise. These packages will include all parts and pieces necessary to field assemble the shelter at the jobsite. The shelter shall be shipped in knocked down format to minimize shipping expenses. Field labor will be kept to a minimum with no on-site welding required.

2. CONCRETE FOR FOUNDATIONS:

- a. Concrete shall have a minimum 28-day compressive strength of 2,500 psi unless noted otherwise on the foundation detail.
- b. Reinforcing steel shall be ASTM A615, Grade 60.

3. COLUMNS:

- a. Hollow Structural Section (HSS) columns shall meet ASTM A500, Grade B with a minimum wall thickness of 3/16" (0.1875").
- b. Unless the columns are direct buried in the foundation the columns shall attach to the foundation with a minimum of four (4) anchor rods and shall meet OSHA Steel Erection Standard 29 CFR 1926.755(a)(1).
- c. Angled 8" Round Columns on Front of Shelter

4. STRUCTURAL FRAMING:

- a. All Hollow Structural Sections (HSS) shall meet ASTM A500, Grade B. "I" Beams, tapered columns or open channel sections shall not be accepted for primary members.

5. COMPRESSION RINGS:

- a. Compression rings shall be made of ASTM A36 structural plate or of structural channel welded together to form the ring. All connections not requiring compression rings shall use ASTM A500, Grade B HSS sections for these connections.

6. CONNECTION REQUIREMENTS:

- a. Anchor rods shall be ASTM F1554, Grade 36 unless otherwise noted.
- b. Structural fasteners shall be ASTM A325 high strength bolts and A563 nuts.
- c. All structural fasteners shall be hidden within the framing members whenever possible.
- d. No field welding shall be required to finish the construction of the shelter.
- e. Manufacturer shall supply extra fasteners.

7. ROOFING MATERIALS:

a. PRIMARY ROOF DECK – TONGUE & GROOVE WOOD DECKING

- 1) Decking shall be 2 x 6 nominal tongue and grooved wood decking.
- 2) Wood species shall be Western Lodgepole Pine, kiln dried, #2 or better. One edge V'd and one edge grooved.
- 3) Fascia shall be Cedar plank.
- 4) 30# felt shall be supplied when the secondary roofing is supplied by ICON.

b. SECONDARY ROOF DECK – MEDALLION-LOK STANDING SEAM ROOFING

- 1) Roofing shall be a minimum of 24-gauge Galvalume steel sheet with ribs that are 1 3/4" tall and the panels are 16" wide. Ribs shall run with the slope of the roof for proper drainage.
- 2) Roof outside surface shall be a baked on Kynar 500 paint finish and shall be

- color supplied in one of the manufacturer's standard colors: TBD Ceiling
to be a "wash coat" primer.
- before 3) All roof panel angles shall be cut in the field.
4) Roofing shall be installed over wood roof deck with 30# felt installed
the metal roof deck.
- made 5) Metal roofing trim shall match the color of the roof and shall be factory
from 26-gauge Kynar 500 painted Galvalume sheet steel.
- rake 6) Trim includes panel ridge caps, hip caps, eave "J" trim, splice channels,
trim, roof peak cap and corner trim as applicable for the model selected.
- Trim may need to be field cut to length. Please refer to the installation drawings
for additional information and detail.
- 7) Ridge, hip and valley caps shall be pre-formed with a single central bend to
match the roof slope and shall be hemmed on both edges.
8) Roof peak caps shall be pre-fabricated with no field assembly required.
9) Roofing is attached to sub-framing with clips.

8. FACTORY FRAME FINISH:

a. E-COAT/ POWDERCOAT:

- 1) The steel shall be shot-blasted to the specification of SSPC-SP10 near white blast cleaning. SSPC-SP2 hand tool cleaning will not be an acceptable alternative.
- 2) The shot-blasted parts are then washed with zinc-phosphate in an eight (8) stage washer.
- 3) The steel is then immersed in a liquid epoxy and coated through an electro-deposition process (E-coat), this is coated both inside and out to a uniform cover of 0.7-0.9 mils. The E-coat totally encapsulates the part for superior corrosion protection.
- 4) The parts are then coated with a color coat of TGIC polyester powder and then one clear coat for a final finish thickness of 8 to 12 mils.

9. ACCESSORIES

a. ELECTRICAL ACCESS

- 1) Standard in all column bases is a 1 3/4" diameter hole, located in the center of the plate. This allows electrical wiring into the column base.

PART 3 – EXECUTION

3.01 STORAGE AND HANDLING

- A. When the shelter arrives at the jobsite protect the products from weather, sunlight and damage.

- B. When unloading, pad the forks and use other precautions to protect the powder-coated finish. Do not use chains to move the materials, use straps. Handle all materials carefully in the field to avoid scratching the powder-coat finish.
- C. Contractor shall store the product elevated from the soil to allow full air circulation around the materials as do not introduce mold, decay, fungi or insects into or on the materials. One end of the materials shall be elevated higher than the other end if storage will be longer than a few days as to allow the water to run off the materials.

3.02 INSTALLATION OF MATERIALS

- A. The shelter shall be placed on prepared foundations that were designed by the manufacturer (unless otherwise noted). Materials for these foundations are not supplied by ICON but by the foundation installation contractor. Foundation shall be constructed to all local building code requirements and per good construction practices for the specific site conditions.
 - 1. In accordance with OSHA Steel Erection Standard 29 CFR 1926.750 Part R, anchor rods shall be installed for proper column stability and shall have a minimum of four (4) anchor bolts per column. Therefore, no single anchor rod column base connections shall be allowed.
- B. The contractor shall install all parts and pieces per the manufacturer's supplied installation instructions and these specifications.
- C. The interface with other work required is to be coordinated by the customer or the customer's agent. Some design may have electrical or plumbing requirements that are not supplied by ICON.
- D. Tolerances on structural steel members are set according to AISC Code of Standard Practice for Steel Buildings and Bridges and have been used for the fabrication of this product. These tolerances will not and cannot be increased. No field slotting or opening of holes will be allowed without proper guidance from the ICON Engineering Department.

3.03 REPAIR

- A. No field modifications or corrections are allowed without authorization from the ICON Engineering Department.

3.04 SITE QUALITY CONTROL

- A. ICON does not require any on-site inspections or testing but these may be required by local authorities and the local building inspector. Please be aware of any on-site requirements prior to starting installation.

END OF SECTION

V. PROJECT PLANS

RIVERBEND PARK RENOVATION PH 2 AMPHITHEATER
INDEX OF DRAWINGS

(SEE ATTACHED SEPARATE DRAWING SET)

1.	TITLE SHEET	L-0.0
2.	EROSION CONTROL	L-0.1
3.	GRADING AND DEMOLITION PLAN	L-1.0
4.	LAYOUT PLAN	L-1.2
5.	CONSTRUCTION PLAN	L-2.0
6.	CONSTRUCTION ELEVATIONS	L-2.1
7.	CONSTRUCTION ELEVATIONS AND DETAILS	L-2.2
8.	CONSTRUCTION DETAILS	L-2.3
9.	PLANTING PLAN AND DETAILS	L-3.0
10.	IRRIGATION PLAN AND DETAILS	L-4.0
11.	WALL DETAILS & SECTIONS	S-1.0
12.	iCON SHELTER SYSTEMS COVER SHEET, ELEVATIONS, ANCHOR BOLT LAYOUT	1.0
13.	iCON SHELTER SYSTEMS FRAME LAYOUT AND FRAME CONNECTIONS	2.0
14.	iCON SHELTER SYSTEMS T&G ROOF LAYOUT AND SS ROOF LAYOUT	3.0
15.	iCON SHELTER SYSTEMS ROOF CONNECTIONS	4.0
16.	ELECTRICAL SPECIFICATIONS	E-0.0
17.	ELECTRICAL SCHEDULES	E-0.1
18.	ELECTRICAL SITE PLAN	E-1.1
19.	ELECTRICAL PLANS	E-2.1
20.	TITLE 24 OUTDOOR DOCUMENTS	E-3.1
21.	TITLE 24 OUTDOOR DOCUMENTS	E-3.2

VI. CONTRACT

**PROJECT CONTRACT
FEATHER RIVER RECREATION AND PARK
DISTRICT/_____**

RIVERBEND PARK RENOVATION PH 2 – AMPHITHEATER

THIS CONTRACT (“CONTRACT”) is made as of _____, 2020, by and between the FEATHER RIVER RECREATION AND PARK DISTRICT, a municipal corporation of the State of California (“District”), and _____, a/an individual, partnership, corporation (“Contractor”).

District and Contractor agree as follows:

ARTICLE 1 BASIC INFORMATION

- 1.1 District: FEATHER RIVER RECREATION AND PARK DISTRICT
- 1.2 District’s Representative: Shawn Rohrbacker, General Manager
- 1.3 District's address: 1875 Feather River Blvd, Oroville, CA 95965
- 1.4 Contractor: _____
- 1.5 Contractor’s Representative: _____
- 1.6 Contractor’s address: _____
- 1.7 Project name and location: _____
- 1.8 District’s Project Manager,
Contract Documents prepared by: _____
- 1.9 The following listed addenda are incorporated:
 - Exhibit “A” Description of Project
 - Exhibit “B” Bid Forms
 - Schedule “A” (PF-8 through PF-9)
 - Schedule “B” (PF10)
- 1.10 Terms defined in District’s General Conditions shall have the same meanings when used in this Contract.

ARTICLE 2 WORK

- 2.1 Contractor shall provide all labor, materials, equipment, tools, and services required by District and shall perform all work described in the Contract Documents. Contractor agrees to do additional Work arising from changes ordered by District pursuant to Article 7 of the General Conditions.

ARTICLE 3 CONTRACT TIME

- 3.1 Contractor shall commence the Work on the date specified in District's Notice to Proceed. The Work shall be fully completed by **JUNE 15, 2020** (the "Contract Time") after the date of commencement specified in District's Notice to Proceed.

ARTICLE 4 LIQUIDATED DAMAGES

- 4.1 District and Contractor agree that if the Work is not completed within the Contract Time, District's damages would be extremely difficult or impracticable to determine. Therefore, District and Contractor agree that if Contractor fails to complete the Work within the Contract Time, Contractor shall pay to District, on demand, as liquidated damages and not as a penalty, the sum of One Thousand Dollars (\$1,000) for each day after the expiration of the Contract Time that the Work remains incomplete, and that this amount is a reasonable estimate of and a reasonable sum for such damages. District may deduct any liquidated damages owed to District, as determined by District, from any payments otherwise payable to Contractor under this Contract.
- 4.2 Nothing contained herein shall limit District's rights or remedies against Contractor for any default other than failure to complete the Work within the Contract Time. This provision for liquidated damages shall not be applicable nor act as a limitation upon District if Contractor abandons the Work. In such event, Contractor shall be liable to District for all losses incurred.

ARTICLE 5 CONTRACT SUM

- 5.1 The Contract Sum is: _____ Dollars (\$_____).
- 5.2 District shall pay to Contractor, for the performance of the Work, the Contract Sum subject to adjustment for alternates, unit price items, changes ordered by District, and as otherwise provided in the Contract Documents.
- 5.3 Unit prices, if any, and their respective estimated quantities, if specified, are listed in Exhibit "B" Contract Sum - Unit Prices.

The Contract Sum will be increased by an amount equal to the unit price multiplied by the actual number of units of each unit price item incorporated in the Work. Adjustment of unit prices, if actual quantities vary from estimated quantities, is subject to the provisions of Section 7.5 of the General Conditions.

ARTICLE 6 CONTRACT DOCUMENTS

6.1 The Contract Documents consist of this Contract, General Conditions, Supplementary Conditions, Special Provisions, Technical Specifications, Exhibits, List of Drawings and Drawings, Addenda, Bid Form, Certificates of Insurance, Performance Bond, Labor and Materials Bond, List of Subcontractors, Notice to Proceed, Contract Modifications, and all other documents identified in this Agreement copies of which have been provided to Contractor by District.

ARTICLE 7 DUE AUTHORIZATION

7.1 The person or persons signing this Contract on behalf of Contractor hereby represent and warrant to District that this Contract is duly authorized, signed, and delivered by Contractor.

THIS CONTRACT is entered into as of the date first written above and is executed in at least three original counterparts. One counterpart original shall be delivered to Contractor and two counterpart originals shall be delivered to District.

FEATHER RIVER RECREATION
AND PARK DISTRICT

CONTRACTOR

By: Shawn Rohrbacker, General Manager

(Name)

(Title)

APPROVED AS TO FORM:

(Name and Classification of License)

FRRPD Attorney

(California License Number)

(Expiration Date)

(Complete notary acknowledgment for all signatures of Contractor. If signed by other than the sole proprietor, a general partner, or corporate officer, attach original notarized power of attorney or corporate resolution.)

PROJECT CONTRACT
FEATHER RIVER RECREATION AND PARK DISTRICT
/ _____

RIVERBEND PARK RENOVATION PH 2 – AMPHITHEATER

EXHIBIT “A”
Description of Project

GENERAL WORK DESCRIPTION - The work, in general, to be done under this contract consists of coordination, installation and construction of a new amphitheater including demolition, grading, drainage, excavation, concrete, steel work, electrical, landscape, irrigation, amenities and signage all within the confines of Riverbend Park in Oroville, CA. all in conformance with the attached Contract specifications entitled:

PROJECT NAME: RIVERBEND PARK RENOVATION PH 2 AMPHITHEATER

and the construction notes and details as shown on the contract plans entitled:

RIVERBEND PARK RENOVATION PH 2 AMPHITHEATER

PROJECT CONTRACT
FEATHER RIVER RECREATION AND PARK DISTRICT
/ _____

RIVERBEND PARK RENOVATION PH 2 AMPHITHEATER

EXHIBIT "B"

BID FORM (SCHEDULES 'A' AND 'B')

VII. BID PROPOSAL FORMS

FEATHER RIVER RECREATION AND PARK DISTRICT
OROVILLE, CALIFORNIA

BID PROPOSAL

RIVERBEND PARK RENOVATION PH 2 – AMPHITHEATER

TO THE FEATHER RIVER RECREATION AND PARK DISTRICT

The undersigned declares to have carefully examined the location of the proposed work, the contract plans and specifications, and read the accompanying General and Special Provisions, and hereby proposes to furnish all materials and do all the work required to complete the said work in accordance with said contract plans, if any, and specifications, and General and Special Provisions, for the unit prices or lump sum set forth in the following attached schedules.

The undersigned further agrees that in case of default in executing the required contract, with necessary bonds within ten (10) days, not including Sunday, after having received notice that the contract is ready for signature, the proceeds of the Bidder's guaranty accompanying the undersigned's bid shall become the property of the FEATHER RIVER RECREATION AND PARK DISTRICT.

In case of discrepancy between the unit price and the total set forth for a unit basis item, the unit price shall prevail, except as provided in (a) or (b), as follows:

(a) If the amount set forth as a unit price is unreadable or otherwise unclear, or is omitted, or is the same as the amount as the entry in the item total column, then the amount set forth in the item total 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:

(b) (Decimal Errors) If the product of the entered unit price and the estimated quantity is exactly off by a factor of ten, one hundred, etc., or one-tenth, or one-hundredth, etc. from the entered total, the discrepancy will be resolved by using the entered unit price or item total, whichever most closely approximates percentagewise the unit price or item total in the District's Final Estimate of cost.

If both the unit price and the item total are unreadable or otherwise unclear, or are omitted, the bid may be deemed irregular. Likewise, if the item total for a lump sum item is unreadable or otherwise unclear, or is omitted, the bid may be deemed irregular unless the project being bid has only a single item and a clear, readable total bid is provided.

Symbols such as commas and dollar signs will be ignored and have no mathematical significance in establishing any unit price or item total or lump sums. Written unit prices, item totals and lump sums will be interpreted according to the number of digits and, if applicable, decimal placement. Cents symbols also

have no significance in establishing any unit price or item total since all such figures are assumed to be expressed in dollars and/or decimal fractions of a dollar. Bids on lump sum items shall be item totals only; if any unit price for a lump sum item is included in a bid and it differs from the item total, the items total shall prevail.

The foregoing provisions for the resolution of specific irregularities cannot be so comprehensive as to cover every omission, inconsistency, error or other irregularity which may occur in a bid. Any situation not specifically provided for will be determined in the discretion of the District, and such discretion will be exercised in the manner deemed by the District to best protect the public interest in the prompt and economical completion of the work. The decision of the District respecting the amount of a bid, or the existence or treatment of an irregularity in a bid shall be final.

City of Oroville Business License No. _____

Taxpayer Identification No. _____

Licensed in accordance with an act providing for the registration of contractors:

License No. _____

Signature of Bidder: _____

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

Date: _____ 20 _____

Business Address

Phone No. _____

RIVERBEND PARK RENOVATION PH 2 – AMPHITHEATER

PRE-AWARD QUALIFICATIONS AND QUESTIONNAIRE

The District has established that prospective bidders shall submit information regarding their qualifications for performing park construction contracts for park renovations of equivalent complexity. Please provide at least three references for the contractor on the following page. Bidders shall submit responses to the Pre-Award Qualification Questionnaire included in this Proposal. Deficiencies noted by the District prior to Award may be cause for determination that the bidder is not capable of meeting the contract requirements. Deficiencies will be considered negative references and/or 'Yes' answers to any of the questions on the Pre-Award Questionnaire.

If the District determines it necessary, a pre-award qualification review meeting will be conducted. The apparent low bidder shall participate in a pre-award qualification review meeting conducted by one or more agents of the District and the Landscape Architect. Notification by the District will be within 7 days after the bid opening and will be provided at least 48 hours prior to the qualifications review meeting. Non-attendance to the qualification review meeting by the apparent low bidder shall be just cause for rejection of the bid. At the qualifications review meeting, the low bidder shall be prepared to discuss and answer questions relative to the Pre-Award Qualifications and Questionnaire submitted with the bid. The District's determination on the bidder's qualifications for performing referenced construction work in a manner that is safe for the workers and the public and of the highest possible quality, will be based on the following:

1. Bidder's and sub-contractor experience in construction work of this nature.
2. Qualifications of on-site supervisory personnel capable of completing the work in a safe and timely manner.
3. Safety history of the bidder and its supervisory personnel.

Successful completion of the pre-award qualifications process does not relieve the Contractor of the responsibility for furnishing materials or producing finished work of the quality specified in project plans and specifications.

The second and third apparent low bidders shall participate in pre-award qualifications review meetings if requested to do so by the District. Non-attendance by the second or third apparent low bidder at any such requested meeting shall be just cause for rejection of bid. The contract provisions described herein shall be considered part of the cost of preparing bids and no separate payment will be made therefor.

STATEMENT OF QUALIFICATIONS

Previous projects completed in the last ten years of equivalent complexity with references.

PRIME CONTRACTOR: Name, Address and Telephone Number

CONTRACTOR REFERENCES (Three Minimum - Name, Address and Telephone Number)

PRE-AWARD QUALIFICATION QUESTIONNAIRE

1. Has your contractor's license been revoked at any time in the last 5 years?
2. Has any Contractor's State License Board license held by your firm or its Responsible Managing Employee (RME) or Responsible Managing Officer (RMO) been suspended with in the last 5 years?

If yes, please explain on a separate signed sheet...

3. At any time during the last 5 years, has your firm or any of its owners or officers, been convicted of a crime involving the awarding of a contract of a government construction project, or the bidding or performance of a government contract?
4. In the last 5 years has your firm been denied an award of a public works contract based on a finding by a public agency that your company was not a responsible bidder?
5. At any time during the last 5 years, has any surety company made any payments on your firm's behalf as a result of a default, to satisfy any claims made against a performance or payment bond issued on your firm behalf, in connection with a construction project, either public or private?

If yes, explain on a separate signed sheet the amount of each claim, the name and telephone number of the claimant, the date of the claim, the grounds for the claim, the present status of the claim, the date of resolution of such claim if resolved, the method by which such claim was resolved, the nature of the resolution and the amount, if any, at which the claim was resolved.

6. Has your firm or any of its owners, officers or partners ever been convicted of a crime involving any federal, state or local law related to construction?

If yes, explain on a separate signed sheet, including who was involved, the name of the public agency, the date of the conviction and the grounds for conviction.

7. Has the Federal Occupation Safety and Health Administration cited and assessed penalties against your firm in the past 5 years?

If yes, attach a separate signed sheet describing.

Signature of Prospective Bidder

In signing this Questionnaire, the prospective bidder certifies that the information and answers on the "Pre-Award Qualification Questionnaire" are complete and accurate.

CONTRACTOR'S PROPOSAL FORM

FOR

RIVERBEND PARK RENOVATION PH 2 AMPHITHEATER

Pursuant to INVITATION TO BID, and INFORMATION TO BIDDERS, the undersigned hereby proposes and agrees that on award by the District in accordance with the provisions of the Contract Documents, to execute the Agreement, with necessary bonds, to furnish and install any and all transportation, materials, equipment, tools, excavation, utilities, sheeting, shoring, bracing and supports, plant and other facilities, and all management, superintendence, permits, labor and services for the RIVERBEND PARK RENOVATION PH 2 AMPHITHEATER, in accordance with the Contract Documents therefor adopted and on file with Feather River Recreation and Park District, within the time hereinafter set forth and at the price or prices set forth in this Bid as follows:

Schedule A -Bidder's Breakdown of Lump Sum Bid

The following breakdown of the Total Lump Sum Bid shall be given with the Bid solely for the purpose of reviewing the Bid balance. The price breakdown shall be fairly apportioned to the various parts of the Work and shall meet with the DISTRICT's approval. Lump Sum prices provided shall be fully loaded and include all costs. If so, requested by the DISTRICT, the Bidder shall substantiate any price or prices with additional detail breakdown. (Schedule A: see PF-8).

Schedule B -Bidder's Unit Prices for Additions, Changes, or Deletions

The Bidder further proposes that, in the event that additions changes, or deletions are made to or from the Drawings and Specifications for the proposed Work, the total adjustments to the lump sum price shall be computed based on the following unit prices for the following types of construction. Unit prices provided shall be fully loaded and include all costs. The DISTRICT reserves the right to request a breakdown from the Contractor on the unit price and, if necessary, to delete these unit prices from the Contract Document if, from the DISTRICT's sole judgement, are unbalanced or not reasonable prices for the work. (Schedule B – See PF-10).

SCHEDULE 'A' - LUMP SUM BID FORM

FOR

RIVERBEND PARK RENOVATION PH 2 AMPHITHEATER

Pursuant to INVITATION TO BID, and INFORMATION TO BIDDERS, the undersigned hereby proposes and agrees that on award by the Feather River Recreation and Park District in accordance with the provisions of the Contract Documents, to execute the Agreement, with necessary bonds, to furnish and install any and all transportation, materials, equipment, tools, excavation, utilities, sheeting, shoring, bracing and supports, plant and other facilities, and all management, superintendence, permits, labor and services for the RIVERBEND PARK RENOVATION PH 2 – AMPHITHEATER, in accordance with the Contract Documents therefor adopted and on file with the Feather River Recreation and Park District, within the time hereinafter set forth and at the price or prices set forth in this Bid as follows:

BASE BID ITEMS

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT (IN FIGURES)
1	Mobilization	1	LS	\$	\$
2	Erosion Control	1	LS	\$	\$
3	Temporary Fencing	1	LS	\$	\$
4	Demolition	1	LS	\$	\$
5	Grading	1	LS	\$	\$
6	Drainage System	1	LS	\$	\$
7	Aggregate Base	1	LS	\$	\$
8	Shade Structure and Footings – <u>COORDINATION AND INSTALLATION ONLY</u> (Shade Structure Provided by Owner)	1	LS	\$	\$
9	Concrete Stem Wall with Cobble Fascia	1	LS	\$	\$
10	Concrete Stage Wall with Board Form Finish and Inlay - 8' H x 18" W	1	LS	\$	\$
11	Concrete Flatwork	1	LS	\$	\$
12	Concrete Stage Flatwork	1	LS	\$	\$
13	Concrete Bench Seat	1	LS	\$	\$
14	Concrete Ramp	1	LS	\$	\$
15	Concrete Stairs – Front Stage	1	LS	\$	\$
16	Concrete Stairs – Back Stage	1	LS	\$	\$
17	1-1/2" Decorative Steel Handrail - Front Stage	1	LS	\$	\$

18	1-1/2" Steel Pipe Handrail - Back Stage	1	LS	\$	\$
19	Stage Signage - Steel Lettering	1	LS	\$	\$
20	Split Rail Fence	1	LS	\$	\$
21	Trash Receptacles	1	LS	\$	\$
22	Electrical and Lighting	1	LS	\$	\$
23	Decomposed Granite	1	LS	\$	\$
24	Boulders	1	LS	\$	\$
25	Trees 15 GAL	1	LS	\$	\$
26	Shrubs 5 GAL	1	LS	\$	\$
27	Irrigation	1	LS	\$	\$

Notes:

1. Contractors must use this form to provide bids (no exceptions or alterations are permitted).
2. Bid item totals must include all materials and labor required for a complete installation.

Total Base Bid \$ _____ (In Figures)

\$ _____ (In Words)

BID AMOUNT FOR THE ABOVE BID ITEMS MUST BE FILLED IN AND COMPLETED IN INK.

*Signature of Bidder: _____

Company Name (printed): _____

*If Corporation, two officer signatures are required.

SCHEDULE 'B' – UNIT PRICES BID FORM
FOR
RIVERBEND PARK RENOVATION PH 2 AMPHITHEATER

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT (IN FIGURES)
1	Concrete Flatwork	1	SF	\$	\$
2	Concrete Stage Flatwork	1	SF	\$	\$
3	Concrete Stage Wall - 8' H x 18" W	1	LF	\$	\$
4	Split Rail Fence	1	LF	\$	\$
8	Trash Receptacles	1	EA	\$	\$
9	Boulders	1	TON	\$	\$
10	Decomposed Granite	1	SF	\$	\$
11	Tree 15 GAL	1	EA	\$	\$
12	Shrub 5 GAL	1	EA	\$	\$

SCHEDULE 'B' UNIT PRICES BID FORM

Notes:

3. Individual unit prices must include all materials and labor required for a complete installation. Unit prices will be utilized for authorized additions or deletions to the scope of work.
4. Contractors must use this form to provide bids (no exceptions or alternations are permitted).

BID AMOUNT OF EACH OF THE ABOVE BID ITEMS MUST BE FILLED IN AND COMPLETED IN INK.

*Signature of Bidder: _____

Company Name (printed): _____

*If Corporation, two officer signatures are required.