

PROJECT MANUAL

**HIRAM JOHNSON HIGH SCHOOL
BASEBALL/SOFTBALL/GOLF FACILITY**

DSA File#: 02-120164

PROJECT/CONTRACT NUMBER: 0520-442

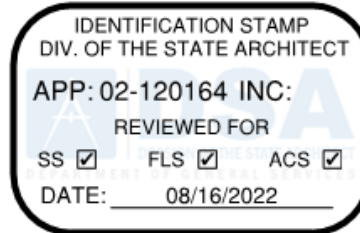
**SACRAMENTO CITY
UNIFIED SCHOOL DISTRICT**

Document 00 00 03

SEALS PAGE



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State of California



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Geotechnical Report, Prepared by: Wallace Kuhl & Associates, Report Number: 11843.01P, Dated: April 17, 2018

Geotechnical Report Supplemental Recommendations, Prepared by: Wallace Kuhl & Associates, Report Number: 11843.01P, Dated: February 2, 2022

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END OF DOCUMENT

NOTICE TO BIDDERS

1. Notice is hereby given that the governing board ("Board") of the Sacramento City Unified School District ("District") will receive sealed bids for **HJHS Baseball/Softball/Golf Facility** project, **Project Number #0520-442** ("Project" or "Contract"). **Engineer's estimate is \$6.5M.**

2. The Project consists of but not limited to:

Removal of existing bleachers and selective fencing. Site relocation of existing baseball and softball fields. Improvements at the baseball field to include construction of new 30' tall chain link backstop with optional netted hood, netting fencing along third baseline. Softball field to include 30' tall chain link backstop and netting fencing along first baseline. Both softball and baseball fields will include home and visitor CMU dugouts. The home side dugouts for both softball and baseball will have storage closets, single station batting cages, single station bullpen for visitors and home side. New double-sided sport specific scoreboards and flagpole located adjacent to scoreboard. Construction to include perimeter fencing. New synthetic turf golf facility with associated fencing. Installation of associated hardscape, fencing, landscaping, drinking fountain, site utilities, electrical infrastructure, pathway and path of travel for accessibility requirements.

Alternate #01: Install synthetic turf at golf putting green perimeter in lieu of landscape and irrigation. If bid alternate is accepted, work to include but not limited to construction on synthetic turf putting green perimeter and related improvements including but not limited to hardscape, utilities, and irrigation.

3. To bid on this Project, the Bidder is required to possess one or more of the following State of California contractors' license(s): **Class A General Engineering and/or B General Building Contractor.**

The Bidder's license(s) must remain active and in good standing throughout the term of the Contract.

4. To bid on this Project, the Bidder is required to be registered as a public works contractor with the Department of Industrial Relations pursuant to the Labor Code.
5. Contract Documents will be available on or after **September 21, 2022**, for review on e-Builder and can be downloaded at <https://bidders.e-builder.net/landing?bidpackageid=07ca5fe8-6215-4c86-b3d0-a31b3bba2c99> or from the District's website, <https://www.scusd.edu/construction-projects-bids>.

6. Sealed bids will be received until **10:00am on October 18, 2022**, at the **District Facilities Office, 5735 47th Avenue, Sacramento, California 95824** at or after which time the bids will be opened and publicly read aloud. Any bid that is submitted after this time shall be nonresponsive and returned to the bidder. Any claim by a bidder of error in its bid must be made in compliance with section 5100 et seq. of the Public Contract Code.

7. All bids shall be on the form provided by the District. Each bid must conform and be responsive to all pertinent Contract Documents, including, but not limited to, the Instructions to Bidders.
8. A bid bond by an admitted surety insurer on the form provided by the District a cashier's check or a certified check, drawn to the order of the Sacramento City Unified School District, in the amount of ten percent (10%) of the total bid price, shall accompany the Bid Form and Proposal, as a guarantee that the Bidder will, within seven (7) calendar days after the date of the Notice of Award, enter into a contract with the District for the performance of the services as stipulated in the bid.
9. A mandatory pre-bid conference and site visit will be held at **10:00am** on **September 28, 2022** at **6879 14th Ave., Sacramento, CA 95820 – meet in parking lot adjacent to Football Stadium**. All participants are required to sign in front of the Administration Building. The site visit is expected to not be more than 1 hour. Failure to attend or tardiness will render bid ineligible.
10. The successful Bidder shall be required to furnish a 100% Performance Bond and a 100% Payment Bond if it is awarded the Contract for the Work.
11. The successful Bidder may substitute securities for any monies withheld by the District to ensure performance under the Contract, in accordance with the provisions of section 22300 of the Public Contract Code.
12. The Contractor and all Subcontractors under the Contractor shall pay all workers on all Work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to section 1770 et seq. of the California Labor Code. Prevailing wage rates are also available from the District or on the Internet at: <<http://www.dir.ca.gov>>.
13. This Project is subject to labor compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code section 1771.4 and subject to the requirements of Title 8 of the California Code of Regulations. The successful Bidder shall comply with all requirements of Division 2, Part 7, Chapter 1, Articles 1-5 of the Labor Code.
14. The District has entered into a Project Labor Agreement that is applicable to this Project. A copy of the Project Labor Agreement is available for review at the District Facilities Office and may be downloaded from the District's website, <https://www.scusd.edu/pod/project-labor-agreement>. The successful bidder and all subcontractors will be required to agree to be bound by the Project Labor Agreement.
15. The Contractor and all Subcontractors under the Contractor shall comply with applicable federal, State, and local requirements relating to COVID-19 or other public health emergency/epidemic/pandemic including, if required, preparing, posting, and implementing a Social Distancing Protocol. Contractor shall further comply with the SCUSD Board Resolution 3211 from 10/12/21 requiring workers on District sites to be fully vaccinated against COVID-19, or else subject to weekly testing for COVID-19.

16. The Board reserves the right to reject any and all bids and/or waive any irregularity in any bid received. If the District awards the Contract, the security of unsuccessful bidder(s) shall be returned within sixty (60) days from the time the award is made. Unless otherwise required by law, no bidder may withdraw its bid for ninety (90) days after the date of the bid opening.
17. The District shall award the Contract, if it awards it at all, to the lowest responsive responsible bidder based on:
 - A. The total base bid (including allowance) and any combination of the alternate as determined by the District. Alternate Bids are sums which may be added to or deleted from Base Bids for the performance of Alternate Work, as delineated in the Bidding Documents. This process is conducted by the District in a "blind selection" format, i.e., without knowledge of the identity of any of the Bidders before ranking of all Bidders from lowest to highest has been determined. All awards will be made in the District's best interest.

END OF DOCUMENT

INSTRUCTIONS TO BIDDERS

Bidders shall follow the instructions in this document, and shall submit all documents, forms, and information required for consideration of a bid.

Sacramento City Unified School District ("District") will evaluate information submitted by the apparent low Bidder and, if incomplete or unsatisfactory to District, Bidder's bid may be rejected at the sole discretion of District.

1. Bids are requested for a general construction contract, or work described in general, for the following project ("Project" or "Contract"):

**HJHS Baseball/Softball/Golf Facility
Project Number #0520-442**

2. A Bidder and its subcontractors must possess the appropriate State of California contractors' license and must maintain the license throughout the duration of the project. Bidders must also be registered as a public works contractor with the Department of Industrial Relations pursuant to the Labor Code. Bids submitted by a contractor who is not properly licensed or registered shall be deemed nonresponsive and will not be considered.
3. Bidders are advised that on the date that bids are opened, the District Offices will not be open to bidders. Bids will be opened privately due to the COVID-19 pandemic. Bid tabulation will be posted within one hour of the bid deadline in the e-Builder Bid Documents and at www.scusd.edu/construction-projects-bids. The District reserves the right to verify the genuineness of any bid security.
4. Bidders must submit bids on the documents titled Bid Form and Proposal, and must submit all other required District forms. Bids not submitted on the District's required forms shall be deemed nonresponsive and shall not be considered. Additional sheets required to fully respond to requested information are permissible.
5. Bidders shall not modify the Bid Form and Proposal or qualify their bids. Bidders shall not submit to the District a re-formatted, re-typed, altered, modified, or otherwise recreated version of the Bid Form and Proposal or other District-provided document.
6. Bids shall be clearly written and without erasure or deletions. District reserves the right to reject any bid containing erasures, deletions, or illegible contents.
7. Bidders must supply all information required by each Bid Document. Bids must be full and complete. District reserves the right in its sole discretion to reject any bid as nonresponsive as a result of any error or omission in the bid. Bidders must complete and submit all of the following documents with the Bid Form and Proposal:
 - a. Bid Bond on the District's form, or other security.
 - b. Designated Subcontractors List.

- c. Site Visit Certification, if a site visit was required.
 - d. Non-Collusion Declaration.
 - e. Iran Contracting Act Certification, if contract value is \$1,000,000 or more.
8. Bidders must submit with their bids a cashier's check or a certified check payable to District, or a bid bond by an admitted surety insurer of not less than ten percent (10%) of amount of Base Bid, plus all additive alternates ("Bid Bond"). If Bidder chooses to provide a Bid Bond as security, Bidder must use the required form of corporate surety provided by District. The Surety on Bidder's Bid Bond must be an insurer admitted in the State of California and authorized to issue surety bonds in the State of California. Bids submitted without necessary bid security will be deemed nonresponsive and will not be considered.
 9. If Bidder to whom the Contract is awarded fails or neglects to enter into the Contract and submit required bonds, insurance certificates, and all other required documents, within **SEVEN (7)** calendar days after the date of the Notice of Award, District may deposit Bid Bond, cashier's check, or certified check for collection, and proceeds thereof may be retained by District as liquidated damages for failure of Bidder to enter into Contract, in the sole discretion of District. It is agreed that calculation of damages District may suffer as a result of Bidder's failure to enter into the Contract would be extremely difficult and impractical to determine and that the amount of the Bidder's required bid security shall be the agreed and conclusively presumed amount of damages.
 10. Bidders must submit with the bid the Designated Subcontractors List for those subcontractors who will perform any portion of Work, including labor, rendering of service, or specially fabricating and installing a portion of the Work or improvement according to detailed drawings contained in the plans and specifications, in excess of one half of one percent (0.5%) of total bid. Failure to submit this list when required by law shall result in bid being deemed nonresponsive and the bid will not be considered.
 11. All of the listed subcontractors are required to be registered as a public works contractor with the Department of Industrial Relations pursuant to the Labor Code.
 - a. An inadvertent error in listing the California contractor license number on the Designated Subcontractors List shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive if the correct contractor's license number is submitted to the District within 24 hours after the bid opening and the corrected number corresponds with the submitted name and location for that subcontractor.
 - b. An inadvertent error listing an unregistered subcontractor shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive provided that any of the following apply:
 - (1) The subcontractor is registered prior to the bid opening.
 - (2) The subcontractor is registered and has paid the penalty registration fee within 24 hours after the bid opening.

- (3) The subcontractor is replaced by another registered subcontractor pursuant to Public Contract Code section 4107.
12. If a mandatory pre-bid conference and site visit ("Site Visit") is required as referenced in the Notice to Bidders, then Bidders must submit the Site Visit Certification with their Bid. District will transmit to all prospective Bidders of record such Addenda as District in its discretion considers necessary in response to questions arising at the Site Visit. Oral statements shall not be relied upon and will not be binding or legally effective. Addenda issued by the District as a result of the Site Visit, if any, shall constitute the sole and exclusive record and statement of the results of the Site Visit.
13. Bidders shall submit the Non-Collusion Declaration with their bids. Bids submitted without the Non-Collusion Declaration shall be deemed nonresponsive and will not be considered.
14. The Contractor and all Subcontractors under the Contractor shall pay all workers on all work performed pursuant to the Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to sections 1770 et seq. of the California Labor Code. Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by Director of the Department of Industrial Relations, are available upon request at the District's principal office. Prevailing wage rates are also available on the internet at <http://www.dir.ca.gov>.
15. The District has entered into a Project Labor Agreement that is applicable to this Project. A copy of the Project Labor Agreement is available for review at the District Facilities Office and may be downloaded from the District's website, <https://www.scusd.edu/pod/project-labor-agreement>. The successful bidder and all subcontractors will be required to agree to be bound by the Project Labor Agreement.
16. The District encourages the participation of disabled veteran business enterprises ("DVBE") on all projects. At the completion of the project, the Contractor may be asked to identify utilized DVBE certified subcontractors during construction and percentage of work complete. Submission of bid signifies careful examination of Contract Documents and complete understanding of the nature, extent, and location of Work to be performed. Bidders must complete the tasks listed below as a condition to bidding, and submission of a bid shall constitute the Bidder's express representation to District that Bidder has fully completed the following:
 - a. Bidder has visited the Site, if required, and has examined thoroughly and understood the nature and extent of the Contract Documents, Work, Site, locality, actual conditions, as-built conditions, and all local conditions and federal, state and local laws, and regulations that in any manner may affect cost, progress, performance, or furnishing of Work or that relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto;

- b. Bidder has conducted or obtained and has understood all examinations, investigations, explorations, tests, reports, and studies that pertain to the subsurface conditions, as-built conditions, underground facilities, and all other physical conditions at or contiguous to the Site or otherwise that may affect the cost, progress, performance, or furnishing of Work, as Bidder considers necessary for the performance or furnishing of Work at the Contract Sum, within the Contract Time, and in accordance with the other terms and conditions of Contract Documents, including specifically the provisions of the General Conditions; and additional examinations, investigations, explorations, tests, reports, studies, or similar information or data are or will be required by Bidder for such purposes;
- c. Bidder has correlated its knowledge and the results of all such observations, examinations, investigations, explorations, tests, reports, and studies with the terms and conditions of the Contract Documents;
- d. Bidder has given the District prompt written notice of all conflicts, errors, ambiguities, or discrepancies that it has discovered in or among the Contract Documents and the actual conditions, and the written resolution(s) thereof by the District is/are acceptable to Bidder;
- e. Bidder has made a complete disclosure in writing to the District of all facts bearing upon any possible interest, direct or indirect, that Bidder believes any representative of the District or other officer or employee of the District presently has or will have in this Contract or in the performance thereof or in any portion of the profits thereof;
- f. Bidder must, prior to bidding, perform the work, investigations, research, and analysis required by this document and that Bidder represented in its Bid Form and Proposal and the Agreement that it performed prior to bidding. Contractor under this Contract is charged with all information and knowledge that a reasonable bidder would ascertain from having performed this required work, investigation, research, and analysis. Bid prices must include entire cost of all work "incidental" to completion of the Work.
- g. Conditions Shown on the Contract Documents: Information as to underground conditions, as-built conditions, or other conditions or obstructions, indicated in the Contract Documents, e.g., on Drawings or in Specifications, has been obtained with reasonable care, and has been recorded in good faith. However, District only warrants, and Bidder may only rely, on the accuracy of limited types of information.
 - (1) As to above-ground conditions or as-built conditions shown or indicated in the Contract Documents, there is no warranty, express or implied, or any representation express or implied, that such information is correctly shown or indicated. This information is verifiable by independent investigation and Bidder is required to make such verification as a condition to bidding. In submitting its Bid, Bidder shall rely on the results of its own independent investigation. In submitting its Bid, Bidder shall not rely on District-supplied information regarding above-ground conditions or as-built conditions.

- (2) As to any subsurface condition shown or indicated in the Contract Documents, Bidder may rely only upon the general accuracy of actual reported depths, actual reported character of materials, actual reported soil types, actual reported water conditions, or actual obstructions shown or indicated. District is not responsible for the completeness of such information for bidding or construction; nor is District responsible in any way for any conclusions or opinions that the Bidder has drawn from such information; nor is the District responsible for subsurface conditions that are not specifically shown (for example, District is not responsible for soil conditions in areas contiguous to areas where a subsurface condition is shown).
 - h. Conditions Shown in Reports and Drawings Supplied for Informational Purposes: Reference is made to the document entitled Geotechnical Data, and the document entitled Existing Conditions, for identification of:
 - (1) Subsurface Conditions: Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that have been utilized by Architect in preparing the Contract Documents; and
 - (2) Physical Conditions: Those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that has been utilized by Architect in preparing the Contract Documents.
 - (3) These reports and drawings are **not** Contract Documents and, except for any "technical" data regarding subsurface conditions specifically identified in Geotechnical Data and Existing Conditions, and underground facilities data, Bidder may not in any manner rely on the information in these reports and drawings. Subject to the foregoing, Bidder must make its own independent investigation of all conditions affecting the Work and must not rely on information provided by District.
17. Bids shall be based on products and systems specified in Contract Documents or listed by name in Addenda. Whenever in the Specifications any materials, process, or article is indicated or specified by grade, patent, or proprietary name, or by name of manufacturer, that Specification shall be deemed to be followed by the words "or equal." Bidder may, unless otherwise stated, offer any material, process, or article that shall be substantially equal or better in every respect to that so indicated or specified. The District is not responsible and/or liable in any way for a Contractor's damages and/or claims related, in any way, to that Contractor's basing its bid on any requested substitution that the District has not approved in advance and in writing. Contractors and materials suppliers who submit requests for substitutions prior to the award of the Contract must do so in writing and in compliance with Public Contract Code section 3400. All requests must comply with the following:
 - a. District must receive any notice of request for substitution of a specified item a minimum of **TEN (10)** calendar days prior to bid opening. The Successful Bidder will not be allowed to substitute specified items unless properly noticed.

- b. Within 35 days after the date of the Notice of Award, the Successful Bidder shall submit data substantiating the request(s) for all substitution(s) containing sufficient information to assess acceptability of product or system and impact on Project, including, without limitation, the requirements specified in the Special Conditions and the Specifications. Insufficient information shall be grounds for rejection of substitution.
 - c. Approved substitutions, if any, shall be listed in Addenda. District reserves the right not to act upon submittals of substitutions until after bid opening.
 - d. Substitutions may be requested after Contract has been awarded only if indicated in and in accordance with requirements specified in the Special Conditions and the Specifications.
18. Bidders may examine any available "as-built" drawings of previous work by giving District reasonable advance notice. District will not be responsible for accuracy of "as-built" drawings. The document entitled Existing Conditions applies to all supplied "as-built" drawings.
19. All questions about the meaning or intent of the Contract Documents are to be directed via email to the District to **Chris Ralston at chris-ralston@scusd.edu and cc: Meredith Collins, ICS at meredith@icscm.com** Interpretations or clarifications considered necessary by the District in response to such questions will be issued in writing to all parties recorded by the District as having received the Contract Documents or posted on E-builder <https://bidders.e-builder.net/landing?bidpackageid=07ca5fe8-6215-4c86-b3d0-a31b3bba2c99> or from the District's website, <https://www.scusd.edu/construction-projects-bids>. **Questions not received by October 4, 2022 by 2pm may not be answered.** Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
20. Addenda may also be issued to modify other parts of the Contract Documents as deemed advisable by the District.
21. Each Bidder must acknowledge each Addendum in its Bid Form and Proposal by number or its Bid shall be considered non-responsive. Each Addendum shall be part of the Contract Documents. A complete listing of Addenda may be secured from the District.
22. This Contract may include alternates. Alternates are defined as alternate products, materials, equipment, systems, methods, or major elements of the construction that may, at the District's option and under terms established in the Contract and pursuant to section 20103.8 of the Public Contract Code, be selected for the Work.
23. The District shall award the Contract, if it awards it at all, to the lowest responsive responsible bidder based on the criteria as indicated in the Notice to Bidders. In the event two or more responsible bidders submit identical bids, the District shall select the Bidder to whom to award the Contract by lot.
24. Discrepancies between written words and figures, or words and numerals, will be resolved in favor of figures or numerals.

25. Bidders in contention for contract awards may be required to attend a Post-Bid interview, which will be set within three (3) calendar days following bid opening. A duly authorized representative of the apparent low bidder is required to attend the Post Bid Interview, in person. The apparent low bidder's authorized representative(s) must have (1) knowledge of how the bid submitted was prepared, (2) the person responsible for supervising performance of the Work, and (3) the authority to bind the apparent low bidder. Failure to attend the Post Bid Interview as scheduled will be considered just cause for the District to reject the Bid as nonresponsive.
26. Any bid protest by any Bidder regarding any other bid must be submitted in writing to the District, before 5:00 pm of the **THIRD (3rd)** business day following bid opening.
- a. Only a Bidder who has actually submitted a bid, and who could be awarded the Contract if the bid protest is upheld, is eligible to submit a bid protest. Subcontractors are not eligible to submit bid protests. A Bidder may not rely on the bid protest submitted by another Bidder.
 - b. A bid protest must contain a complete statement of any and all bases for the protest and all supporting documentation. Materials submitted after the bid protest deadline will not be considered.
 - c. The protest must refer to the specific portions of all documents that form the basis for the protest.
 - (1) Without limitation to any other basis for protest, an inadvertent error in listing the California contractor's license number on the Designated Subcontractors List shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive if the correct contractor's license number is submitted to the District within 24 hours after the bid opening and the corrected number corresponds with the submitted name and location for that subcontractor.
 - (2) Without limitation to any other basis for protest, an inadvertent error listing an unregistered subcontractor shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive provided that any of the following apply:
 - (i) The subcontractor is registered prior to the bid opening.
 - (ii) The subcontractor is registered and has paid the penalty registration fee within 24 hours after the bid opening.
 - (iii) The subcontractor is replaced by another registered subcontractor pursuant to Public Contract Code section 4107.
 - d. The protest must include the name, address and telephone number of the person representing the protesting party.
 - e. The party filing the protest must concurrently transmit a copy of the protest and any attached documentation to all other parties with a direct financial interest that may be adversely affected by the outcome of the protest. Such

parties shall include all other bidders or proposers who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.

- f. The procedure and time limits set forth in this paragraph are mandatory and are each bidder's sole and exclusive remedy in the event of bid protest. Failure to comply with these procedures shall constitute a waiver of any right to further pursue the bid protest, including filing a Government Code Claim or legal proceedings.
27. The Bidder to whom Contract is awarded shall execute and submit the following documents by 5:00pm of the **SEVENTH (7th)** calendar day following the date of the Notice of Intent to Award. Failure to properly and timely submit these documents entitles District to reject the bid as nonresponsive.
- a. Agreement: To be executed by successful Bidder. Submit three (3) copies, each bearing an original signature. An electronic signature shall be deemed to be the equivalent of the actual original signature.
 - b. Escrow of Bid Documentation: This must include all required documentation. See the document titled Escrow Bid Documentation for more information.
 - c. Performance Bond (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.
 - d. Payment Bond (Contractor's Labor and Material Bond) (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.
 - e. Insurance Certificates and Endorsements as required.
 - f. Workers' Compensation Certification.
 - g. Prevailing Wage and Related Labor Requirements Certification.
 - h. Drug-Free Workplace Certification.
 - i. Tobacco-Free Environment Certification.
 - j. Imported Materials Certification.
 - k. Criminal Background Investigation/Fingerprinting Certification.
 - l. Registered Subcontractors List: Must include Department of Industrial Relations (DIR) registration number of each subcontractor for all tiers.
28. Time for Completion: District may issue a Notice to Proceed within **NINETY (90)** days from the date of the Notice of Intent to Award. Once Contractor has received the Notice to Proceed, Contractor shall complete the Work within the period of time indicated in the Contract Documents.
- a. In the event that the District desires to postpone issuing the Notice to Proceed beyond this 90-day period, it is expressly understood that with

reasonable notice to the Contractor, the District may postpone issuing the Notice to Proceed.

- b. It is further expressly understood by Contractor that Contractor shall not be entitled to any claim of additional compensation as a result of the postponement of the issuance of the Notice to Proceed beyond a 90-day period. If the Contractor believes that a postponement of issuance of the Notice to Proceed will cause a hardship to the Contractor, the Contractor may terminate the Contract. Contractor's termination due to a postponement beyond this 90-day period shall be by written notice to District within **TEN (10)** calendar days after receipt by Contractor of District's notice of postponement.
 - c. It is further understood by the Contractor that in the event that Contractor terminates the Contract as a result of postponement by the District, the District shall only be obligated to pay Contractor for the Work that Contractor had performed at the time of notification of postponement and which the District had in writing authorized Contractor to perform prior to issuing a Notice to Proceed.
 - d. Should the Contractor terminate the Contract as a result of a notice of postponement, District shall have the authority to award the Contract to the next lowest responsive responsible bidder.
29. District reserves the right to reject any or all bids, including without limitation the right to reject any or all nonconforming, nonresponsive, unbalanced, or conditional bids, to re-bid, and to reject the bid of any bidder if District believes that it would not be in the best interest of the District to make an award to that bidder, whether because the bid is not responsive or the bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by District. District also reserves the right to waive any inconsequential deviations or irregularities in any bid. For purposes of this paragraph, an "unbalanced bid" is one having nominal prices for some work items and/or enhanced prices for other work items.
30. It is the policy of the District that no qualified person shall be excluded from participating in, be denied the benefits of, or otherwise be subjected to discrimination in any consideration leading to the award of contract, based on race, color, gender, sexual orientation, political affiliation, age, ancestry, religion, marital status, national origin, medical condition or disability. The Successful Bidder and its subcontractors shall comply with applicable federal and state laws, including, but not limited to the California Fair Employment and Housing Act, beginning with Government Code section 12900, and Labor Code section 1735.
31. Prior to the award of Contract, District reserves the right to consider the responsibility of the Bidder. District may conduct investigations as District deems necessary to assist in the evaluation of any bid and to establish the responsibility, including, without limitation, qualifications and financial ability of Bidders, proposed subcontractors, suppliers, and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to District's satisfaction within the prescribed time.

32. Bidder expressly acknowledges that it is familiar with and capable of complying with applicable federal, State, and local requirements relating to COVID-19 or other public health emergency/epidemic/pandemic including, if required, preparing, posting, and implementing a Social Distancing Protocol, and such costs shall be included in the bid.

END OF DOCUMENT

EXISTING CONDITIONS

1. Summary

This document describes existing conditions at or near the Project, and use of information available regarding existing conditions. This document is **not** part of the Contract Documents. See General Conditions for definition(s) of terms used herein.

2. Reports and Information on Existing Conditions

- a. Documents providing a general description of the Site and conditions of the Work may have been collected by the Sacramento City Unified School District ("District"), its consultants, contractors, and tenants. These documents may, but are not required to, include previous contracts, contract specifications, tenant improvement contracts, as-built drawings, utility drawings, and information regarding underground facilities.
- b. Information regarding existing conditions may be inspected at the District offices or the Construction Manager's offices, if any, and copies may be obtained at cost of reproduction and handling upon Bidder's agreement to pay for such copies. These reports, documents, and other information are **not** part of the Contract Documents. These reports, documents, and other information do **not** excuse Contractor from fulfilling Contractor's obligation to independently investigate any or all existing conditions or from using reasonable prudent measures to avoid damaging existing improvements.
- c. Information regarding existing conditions may also be included in the Project Manual, but shall **not** be considered part of the Contract Documents.
- d. Prior to commencing this Work, Contractor and the District's representative shall survey the Site to document the condition of the Site. Contractor will record the survey in digital videotape format and provide an electronic copy to the District within fourteen (14) days of the survey.
- e. Contractor may also document any pre-existing conditions in writing, provided that both the Contractor and the District's representative agree on said conditions and sign a memorandum documenting the same.
- f. The reports and other data or information regarding existing conditions and underground facilities at or contiguous to the Project are the following:
 - (1) Topographic survey and underground utilities. (included in Drawings.)

3. Use of Information

- a. Information regarding existing conditions was obtained only for use of District and its consultants, contractors, and tenants for planning and design and is **not** part of the Contract Documents.

- b. District does not warrant, and makes no representation regarding, the accuracy or thoroughness of any information regarding existing conditions. Bidder represents and agrees that in submitting a bid it is not relying on any information regarding existing conditions supplied by District.
 - c. Under no circumstances shall District be deemed to warrant or represent existing above-ground conditions, as-built conditions, or other actual conditions, verifiable by independent investigation. These conditions are verifiable by Bidder by the performance of its own independent investigation that Bidder must perform as a condition to bidding and Bidder should not and shall not rely on this information or any other information supplied by District regarding existing conditions.
 - d. Any information shown or indicated in the reports and other data supplied herein with respect to existing underground facilities at or contiguous to the Project may be based upon information and data furnished to District by the District's employees and/or consultants or builders of such underground facilities or others. District does not assume responsibility for the completeness of this information, and Bidder is solely responsible for any interpretation or conclusion drawn from this information.
 - e. District shall be responsible only for the general accuracy of information regarding underground facilities, and only for those underground facilities that are owned by District, and only where Bidder has conducted the independent investigation required of it pursuant to the Instructions to Bidders, and discrepancies are not apparent.
4. Investigations/Site Examinations
- a. Before submitting a bid, each Bidder is responsible for conducting or obtaining any additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and underground facilities) at or contiguous to the Site or otherwise, that may affect cost, progress, performance, or furnishing of Work or that relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto or that Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of Contract Documents.
 - b. On request, District will provide each Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies, as each Bidder deems necessary for submission of a bid. Bidders must fill all holes and clean up and restore the Site to its former condition upon completion of its explorations, investigations, tests, and studies. Such investigations and Site examinations may be performed during any and all Site visits indicated in the Notice to Bidders and only under the provisions of the Contract Documents, including, but not limited to, proof of insurance and obligation to indemnify against claims arising from such work, and District's prior approval.

END OF DOCUMENT

GEOTECHNICAL DATA

1. Summary

This document describes geotechnical data at or near the Project that is in the District's possession available for Contractor's review, and use of data resulting from various investigations. This document is **not** part of the Contract Documents. See General Conditions for definition(s) of terms used herein.

2. Geotechnical Reports

- a. Geotechnical reports may have been prepared for and around the Site and/or in connection with the Work by soil investigation engineers hired by Sacramento City Unified School District ("District"), and its consultants, contractors, and tenants.
- b. Geotechnical reports may be inspected at the District offices or the Construction Manager's offices, if any, and copies may be obtained at cost of reproduction and handling upon Bidder's agreement to pay for such copies. These reports are **not** part of the Contract Documents.
- c. The reports and drawings of physical conditions that may relate to the Project are the following: **Wallace Kuhl & Associates report dated 4/17/2018 and updated 2/2/2022 identified as Exhibit C.**

3. Use of Data

- a. Geotechnical data were obtained only for use of District and its consultants, contractors, and tenants for planning and design and are **not** a part of Contract Documents.
- b. Except as expressly set forth below, District does not warrant, and makes no representation regarding, the accuracy or thoroughness of any geotechnical data. Bidder represents and agrees that in submitting a bid it is not relying on any geotechnical data supplied by District, except as specifically allowed below.
- c. Under no circumstances shall District be deemed to make a warranty or representation of existing above ground conditions, as-built conditions, geotechnical conditions, or other actual conditions verifiable by independent investigation. These conditions are verifiable by Bidder by the performance of its own independent investigation that Bidder should perform as a condition to bidding and Bidder must not and shall not rely on information supplied by District.

4. Limited Reliance Permitted on Certain Information

a. Reference is made herein for identification of:

Reports of explorations and tests of subsurface conditions at or contiguous to the Site that have been utilized by District in preparation of the Contract Documents.

Drawings of physical conditions in or relating to existing subsurface structures (except underground facilities) that are at or contiguous to the Site and have been utilized by District in preparation of the Contract Documents.

b. Bidder may rely upon the general accuracy of the "technical data" contained in the reports and drawings identified above, but only insofar as it relates to subsurface conditions, provided Bidder has conducted the independent investigation required pursuant to Instructions to Bidders, and discrepancies are not apparent. The term "technical data" in the referenced reports and drawings shall be limited as follows:

- (1) The term "technical data" shall include actual reported depths, reported quantities, reported soil types, reported soil conditions, and reported material, equipment or structures that were encountered during subsurface exploration. The term "technical data" does not include, and Bidder may not rely upon, any other data, interpretations, opinions or information shown or indicated in such drawings or reports that otherwise relate to subsurface conditions or described structures.
- (2) The term "technical data" shall not include the location of underground facilities.
- (3) Bidder may not rely on the completeness of reports and drawings for the purposes of bidding or construction. Bidder may rely upon the general accuracy of the "technical data" contained in such reports or drawings.
- (4) Bidder is solely responsible for any interpretation or conclusion drawn from any "technical data" or any other data, interpretations, opinions, or information provided in the identified reports and drawings.

5. Investigations/Site Examinations

a. Before submitting a bid, each Bidder is responsible for conducting or obtaining any additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and underground facilities) at or contiguous to the Site or otherwise, that may affect cost, progress, performance, or furnishing of Work or that relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto or that Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of Contract Documents.

- b. On request, District will provide each Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies, as each Bidder deems necessary for submission of a bid. Bidders must fill all holes and clean up and restore the Site to its former condition upon completion of its explorations, investigations, tests, and studies. Such investigations and Site examinations may be performed during any and all Site visits indicated in the Notice to Bidders and only under the provisions of the Contract Documents, including, but not limited to, proof of insurance and obligation to indemnify against claims arising from such work, and District's prior approval.

END OF DOCUMENT

BID FORM AND PROPOSAL

To: Governing Board of the Sacramento City Unified School District ("District" or "Owner")

From: _____
(Proper Name of Bidder)

The undersigned declares that Bidder has read and understands the Contract Documents, including, without limitation, the Notice to Bidders and the Instructions to Bidders, and agrees and proposes to furnish all necessary labor, materials, and equipment to perform and furnish all work in accordance with the terms and conditions of the Contract Documents, including, without limitation, the Drawings and Specifications of **Bid No. 0520-442**, for the following project known as:

HJHS Baseball/Softball/Golf Facility

("Project" or "Contract") and will accept in full payment for that Work the following total lump sum amount, all taxes included:

_____ dollars	\$ _____
BASEBALL BASE BID	
_____ dollars	\$ _____
SOFTBALL BASE BID	
_____ dollars	\$ _____
GOLF BASE BID	

Allowance: Owner

Five hundred thousand and no/100 _____ dollars	<u>\$500,000.00</u>
Allowance	

TOTAL (Baseball Base bid + Softball Base Bid + Golf Base Bid + Owner Allowance)

_____ dollars	\$ _____
TOTAL BID - (Baseball + Softball + Golf)	

Alternate #01: Install synthetic turf at golf putting green perimeter in lieu of landscape and irrigation. If bid alternate is accepted, work to include but not limited to construction on synthetic turf putting green perimeter and related improvements including but not limited to hardscape, utilities, and irrigation.

_____ dollars \$ _____
<i>Alternate #01</i>

Descriptions of alternates are primarily scope definitions and do not necessarily detail the full range of materials and processes needed to complete the construction.

Additional Detail Regarding Calculation of Base Bid

1. Allowance: The above allowance shall only be allocated for unforeseen items relating to the Work. Contractor shall not bill for or be due any portion of this allowance unless the District has identified specific work, Contractor has submitted a price for that work or the District has proposed a price for that work, the District has accepted the cost for that work, and the District has prepared an Allowance Expenditure Directive incorporating that work. Contractor hereby authorizes the District to execute a unilateral deductive change order at or near the end of the Project for all or any portion of the allowance not allocated. Any unused portion of the allowance will revert back to the District documented by a deductive change order.
2. The undersigned has reviewed the Work outlined in the Contract Documents and fully understands the scope of Work required in this Proposal, understands the construction and project management function(s) is described in the Contract Documents, and that each Bidder who is awarded a contract shall be in fact a prime contractor, not a subcontractor, to the District, and agrees that its Proposal, if accepted by the District, will be the basis for the Bidder to enter into a contract with the District in accordance with the intent of the Contract Documents.
3. The undersigned has notified the District in writing of any discrepancies or omissions or of any doubt, questions, or ambiguities about the meaning of any of the Contract Documents, and has contacted the Construction Manager before bid date to verify the issuance of any clarifying Addenda.
4. The undersigned agrees to commence work under this Contract on the date established in the Contract Documents and to complete all work within the time specified in the Contract Documents.
5. The liquidated damages clause of the General Conditions and Agreement is hereby acknowledged.
6. It is understood that the District reserves the right to reject this bid and that the bid shall remain open to acceptance and is irrevocable for a period of ninety (90) days.
7. The following documents are attached hereto:
 - Bid Bond on the District's form or other security
 - Designated Subcontractors List
 - Site Visit Certification
 - Non-Collusion Declaration
 - Iran Contracting Act Certification

8. Receipt and acceptance of the following Addenda is hereby acknowledged:

No. _____, Dated _____	No. _____, Dated _____
No. _____, Dated _____	No. _____, Dated _____
No. _____, Dated _____	No. _____, Dated _____

9. Bidder acknowledges that the license required for performance of the Work is a **Class A General Engineering and/or B General Building Contractor** license.

10. Bidder hereby certifies that Bidder is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the Work.

11. Bidder specifically acknowledges and understands that if it is awarded the Contract, that it shall perform the Work of the Project while complying with all requirements of the Department of Industrial Relations.

12. Bidder hereby certifies that its bid includes sufficient funds to permit Bidder to comply with all local, state or federal labor laws or regulations during the Project, including payment of prevailing wage, and that Bidder will comply with the provisions of Labor Code section 2810(d) if awarded the Contract

13. Bidder agrees to comply with all requirements of the Project Labor Agreement.

14. Bidder represents that it is competent, knowledgeable, and has special skills with respect to the nature, extent, and inherent conditions of the Work to be performed. Bidder further acknowledges that there are certain peculiar and inherent conditions existent in the construction of the Work that may create, during the Work, unusual or peculiar unsafe conditions hazardous to persons and property.

15. Bidder expressly acknowledges that it is aware of such peculiar risks and that it has the skill and experience to foresee and to adopt protective measures to adequately and safely perform the Work with respect to such hazards.

16. Bidder expressly acknowledges that it is familiar with and capable of complying with applicable federal, State, and local requirements relating to COVID-19 or other public health emergency/epidemic/pandemic including, if required, preparing, posting, and implementing a Social Distancing Protocol.

17. Bidder expressly acknowledges that it is aware that if a false claim is knowingly submitted (as the terms "claim" and "knowingly" are defined in the California False Claims Act, Gov. Code, § 12650 et seq.), the District will be entitled to civil remedies set forth in the California False Claim Act. It may also be considered fraud and the Contractor may be subject to criminal prosecution.

18. The undersigned Bidder certifies that it is, at the time of bidding, and shall be throughout the period of the Contract, licensed by the State of California to do the type of work required under the terms of the Contract Documents and registered as

a public works contractor with the Department of Industrial Relations. Bidder further certifies that it is regularly engaged in the general class and type of work called for in the Contract Documents.

Furthermore, Bidder hereby certifies to the District that all representations, certifications, and statements made by Bidder, as set forth in this bid form, are true and correct and are made under penalty of perjury.

Dated this _____ day of _____ 20 ____

Name of Bidder: _____

Type of Organization: _____

Signature: _____

Print Name: _____

Title: _____

Address of Bidder: _____

Taxpayer Identification No. of Bidder: _____

Telephone Number: _____

E-mail: _____ Web Page: _____

Contractor's License No(s): No.: _____ Class: _____ Expiration Date: _____

No.: _____ Class: _____ Expiration Date: _____

No.: _____ Class: _____ Expiration Date: _____

Public Works Contractor Registration No.: _____

END OF DOCUMENT

BID BOND

(Note: If Bidder is providing a bid bond as its bid security, Bidder must use this form, NOT a surety company form.)

KNOW ALL PERSONS BY THESE PRESENTS:

That the undersigned, _____, as Principal ("Principal"),

and _____, as Surety ("Surety"), a corporation organized and existing under and by virtue of the laws of the State of California and authorized to do business as a surety in the State of California, are held and firmly bound unto the Sacramento City Unified School District ("District") of Sacramento County, State of California, as Obligee, in an amount equal to ten percent (10%) of the Base Bid plus alternates, in the sum of

_____ Dollars (\$ _____)

lawful money of the United States of America, for the payment of which sum well and truly to be made, we, and each of us, bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal has submitted a bid to the District for all Work specifically described in the accompanying bid for the following project: **HJHS Baseball/Softball/Golf Facility 0520-442** ("Project" or "Contract").

NOW, THEREFORE, if the Principal is awarded the Contract and, within the time and manner required under the Contract Documents, after the prescribed forms are presented to Principal for signature, enters into a written contract, in the prescribed form in accordance with the bid, and files two bonds, one guaranteeing faithful performance and the other guaranteeing payment for labor and materials as required by law, and meets all other conditions to the Contract between the Principal and the Obligee becoming effective, or if the Principal shall fully reimburse and save harmless the Obligee from any damage sustained by the Obligee through failure of the Principal to enter into the written contract and to file the required performance and labor and material bonds, and to meet all other conditions to the Contract between the Principal and the Obligee becoming effective, then this obligation shall be null and void; otherwise, it shall be and remain in full force and effect. The full payment of the sum stated above shall be due immediately if Principal fails to execute the Contract within seven (7) days of the date of the District's Notice of Award to Principal.

Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or the call for bids, or to the work to be performed thereunder, or the specifications accompanying the same, shall in any way affect its obligation under this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or the call for bids, or to the work, or to the specifications.

In the event suit is brought upon this bond by the Obligee and judgment is recovered, the Surety shall pay all costs incurred by the Obligee in such suit, including a reasonable attorneys' fee to be fixed by the Court.

If the District awards the bid, the security of unsuccessful bidder(s) shall be returned within sixty (60) days from the time the award is made. Unless otherwise required by law, no bidder may withdraw its bid for ninety (90) days after the date of the bid opening.

IN WITNESS WHEREOF, this instrument has been duly executed by the Principal and Surety above named, on the _____ day of _____, 20__.

Principal

By

Surety

By

Name of California Agent of Surety

Address of California Agent of Surety

Telephone Number of California Agent of Surety

Bidder must attach Power of Attorney and Certificate of Authority for Surety and a Notarial Acknowledgment for all Surety's signatures. The California Department of Insurance must authorize the Surety to be an admitted Surety Insurer.

END OF DOCUMENT

DESIGNATED SUBCONTRACTORS LIST
(Public Contact Code Sections 4100-4114)

PROJECT: **HJHS Baseball/Softball/Golf Facility 0520-442**

Bidder acknowledges and agrees that it must clearly set forth below the name, location and California contractor license number of each subcontractor who will perform work or labor or render service to the Bidder in or about the construction of the Work or who will specially fabricate and install a portion of the Work according to detailed drawings contained in the plans and specifications in an amount in excess of one-half of one percent (0.5%) of Bidder's total Base Bid and the kind of Work that each will perform. Vendors or suppliers of materials only do not need to be listed.

Bidder acknowledges and agrees that, if Bidder fails to list as to any portion of Work, or if Bidder lists more than one subcontractor to perform the same portion of Work, Bidder must perform that portion itself or be subjected to penalty under applicable law. In case more than one subcontractor is named for the same kind of Work, state the portion of the kind of Work that each subcontractor will perform.

If alternate bid(s) is/are called for and Bidder intends to use subcontractors different from or in addition to those subcontractors listed for work under the Base Bid, Bidder must list subcontractors that will perform Work in an amount in excess of one half of one percent (0.5%) of Bidder's total Base Bid plus alternate(s).

If further space is required for the list of proposed subcontractors, attach additional copies of page 2 showing the required information, as indicated below.

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

DIR Registration #: _____

Portion of Work: _____

Date: _____

Proper Name of Bidder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

SITE VISIT CERTIFICATION

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID
IF SITE VISIT WAS MANDATORY

PROJECT: **HJHS Baseball/Softball/Golf Facility 0520-442**

Check option that applies:

_____ I certify that I visited the Site of the proposed Work, received the attached _____ pages of information, and became fully acquainted with the conditions relating to construction and labor. I fully understand the facilities, difficulties, and restrictions attending the execution of the Work under contract.

_____ I certify that _____ (Bidder's representative) visited the Site of the proposed Work, received the attached _____ pages of information, and became fully acquainted with the conditions relating to construction and labor. The Bidder's representative fully understood the facilities, difficulties, and restrictions attending the execution of the Work under contract.

Bidder fully indemnifies the Sacramento City Unified School District, its Architect, its Engineers, its Construction Manager, and all of their respective officers, agents, employees, and consultants from any damage, or omissions, related to conditions that could have been identified during my visit and/or the Bidder's representative's visit to the Site.

I certify under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Date: _____

Proper Name of Bidder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

**NON-COLLUSION DECLARATION
(Public Contract Code Section 7106)**

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid.
[Title] [Name of Firm]

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____,
[Date]

at _____, _____.
[City] [State]

Date: _____

Proper Name of Bidder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

IRAN CONTRACTING ACT CERTIFICATION
(Public Contract Code Sections 2202-2208)

PROJECT/CONTRACT NO.: **HJHS Baseball/Softball/Golf Facility 0520-442** between the Sacramento City Unified School District ("District") and _____ ("Contractor" or "Bidder") ("Contract" or "Project").

Prior to bidding on or submitting a proposal for a contract for goods or services of \$1,000,000 or more, the bidder/proposer must submit this certification pursuant to Public Contract Code section 2204.

The bidder/proposer must complete **ONLY ONE** of the following two options. To complete **OPTION 1**, check the corresponding box **and** complete the certification below. To complete **OPTION 2**, check the corresponding box, complete the certification below, and attach documentation demonstrating the exemption approval.

- OPTION 1.** Bidder/Proposer is not on the current list of persons engaged in investment activities in Iran created by the California Department of General Services ("DGS") pursuant to Public Contract Code section 2203(b), and we are not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person, for 45 days or more, if that other person will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS.
- OPTION 2.** Bidder/Proposer has received a written exemption from the certification requirement pursuant to Public Contract Code sections 2203(c) and (d). *A copy of the written documentation demonstrating the exemption approval is included with our bid/proposal.*

CERTIFICATION:

I, the official named below, CERTIFY UNDER PENALTY OF PERJURY, that I am duly authorized to legally bind the bidder/proposer to the OPTION selected above. This certification is made under the laws of the State of California.

<i>Vendor Name/Financial Institution (Printed)</i>	<i>Federal ID Number (or n/a)</i>
<i>By (Authorized Signature)</i>	
<i>Printed Name and Title of Person Signing</i>	<i>Date Executed</i>

END OF DOCUMENT

WORKERS' COMPENSATION CERTIFICATION

PROJECT/CONTRACT NO **HJHS Baseball/Softball/Golf Facility 0520-442** between the Sacramento City Unified School District ("District") and _____ ("Contractor" or "Bidder") ("Contract" or "Project").

Labor Code section 3700, in relevant part, provides:

Every employer except the State shall secure the payment of compensation in one or more of the following ways:

- a. By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this state; and/or
- b. By securing from the Director of Industrial Relations a certificate of consent to self-insure, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his employees.

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

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

(In accordance with Labor Code sections 1860 and 1861, the above certificate must be signed and filed with the awarding body prior to performing any Work under this Contract.)

END OF DOCUMENT

**PREVAILING WAGE AND
RELATED LABOR REQUIREMENTS CERTIFICATION**

PROJECT/CONTRACT NO.: **HJHS Baseball/Softball/Golf Facility 0520-442** between the Sacramento City Unified School District ("District") and _____ ("Contractor" or "Bidder") ("Contract" or "Project").

I hereby certify that I will conform to the State of California Public Works Contract requirements regarding prevailing wages, benefits, on-site audits with 48-hours' notice, payroll records, and apprentice and trainee employment requirements, for all Work on the above Project including, without limitation, labor compliance monitoring and enforcement by the Department of Industrial Relations.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DRUG-FREE WORKPLACE CERTIFICATION

PROJECT/CONTRACT NO: **HJHS Baseball/Softball/Golf Facility 0520-442** between the Sacramento City Unified School District ("District") and _____ ("Contractor" or "Bidder") ("Contract" or "Project").

This Drug-Free Workplace Certification form is required from the successful Bidder pursuant to Government Code section 8350 et seq., the Drug-Free Workplace Act of 1990. The Drug-Free Workplace Act of 1990 requires that every person or organization awarded a contract or grant for the procurement of any property or service from any state agency must certify that it will provide a drug-free workplace by doing certain specified acts. In addition, the Act provides that each contract or grant awarded by a state agency may be subject to suspension of payments or termination of the contract or grant, and the contractor or grantee may be subject to debarment from future contracting, if the contracting agency determines that specified acts have occurred.

The District is not a "state agency" as defined in the applicable section(s) of the Government Code, but the District is a local agency and public school district under California law and requires all contractors on District projects to comply with the provisions and requirements of the Drug-Free Workplace Act of 1990.

Contractor must also comply with the provisions of Health & Safety Code section 11362.3 which prohibits the consumption or possession of cannabis or cannabis products in any public place, including school grounds, and specifically on school grounds while children are present.

Contractor shall certify that it will provide a drug-free workplace by doing all of the following:

- a. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in the person's or organization's workplace and specifying actions which will be taken against employees for violations of the prohibition.
- b. Establishing a drug-free awareness program to inform employees about all of the following:
 - (1) The dangers of drug abuse in the workplace.
 - (2) The person's or organization's policy of maintaining a drug-free workplace.
 - (3) The availability of drug counseling, rehabilitation, and employee-assistance programs.
 - (4) The penalties that may be imposed upon employees for drug abuse violations.
- c. Requiring that each employee engaged in the performance of the contract or grant be given a copy of the statement required above, and that, as a

condition of employment on the contract or grant, the employee agrees to abide by the terms of the statement.

I, the undersigned, agree to fulfill the terms and requirements of Government Code section 8355 listed above and will publish a statement notifying employees concerning (a) the prohibition of controlled substance at the workplace, (b) establishing a drug-free awareness program, and (c) requiring that each employee engaged in the performance of the Contract be given a copy of the statement required by section 8355(a), and requiring that the employee agree to abide by the terms of that statement.

I also understand that if the District determines that I have either (a) made a false certification herein, or (b) violated this certification by failing to carry out the requirements of section 8355, that the Contract awarded herein is subject to termination, suspension of payments, or both. I further understand that, should I violate the terms of the Drug-Free Workplace Act of 1990, I may be subject to debarment in accordance with the requirements of the aforementioned Act.

I acknowledge that I am aware of the provisions of and hereby certify that I will adhere to the requirements of the Drug-Free Workplace Act of 1990 and Health and Safety Code section 11362.3.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

TOBACCO-FREE ENVIRONMENT CERTIFICATION

PROJECT/CONTRACT NO.: **HJHS Baseball/Softball/Golf Facility 0520-442** between the Sacramento City Unified School District ("District") and _____ ("Contractor" or "Bidder") ("Contract" or "Project").

This Tobacco-Free Environment Certification form is required from the successful Bidder.

Pursuant to, without limitation, 20 U.S.C. section 6083, Labor Code section 6400 et seq., Health & Safety Code section 104350 et seq., Business and Professions Code section 22950 et seq., and District Board policies, all District sites, including the Project site, are tobacco-free environments. Smoking and the use of tobacco products by all persons is prohibited on or in District property. District property includes school buildings, school grounds, school-owned vehicles and vehicles owned by others while on District property. The prohibition on smoking includes the use of any electronic smoking device that creates an aerosol or vapor, in any manner or in any form, and the use of any oral smoking device for the purpose of circumventing the prohibition of tobacco smoking. Further, Health & Safety Code section 11362.3 prohibits the smoking or use of cannabis or cannabis products in any place where smoking tobacco is prohibited.

I acknowledge that I am aware of the District's policy regarding tobacco-free environments at District sites, including the Project site and hereby certify that I will adhere to the requirements of that policy and not permit any of my firm's employees, agents, subcontractors, or my firm's subcontractors' employees or agents, to use tobacco and/or smoke on the Project site.

Date: _____
Proper Name of Contractor: _____
Signature: _____
Print Name: _____
Title: _____

END OF DOCUMENT

IMPORTED MATERIALS CERTIFICATION

PROJECT/CONTRACT NO.: **HJHS Baseball/Softball/Golf Facility 0520-442** between the Sacramento City Unified School District ("District") and _____ ("Contractor" or "Bidder") ("Contract" or "Project"). This form shall be executed by all entities that, in any way, provide or deliver and/or supply any soils, aggregate, or related materials ("Fill") to the Project Site and shall be provided to the District at least ten (10) days before delivery. All Fill shall satisfy all requirements of any environmental review of the Project performed pursuant to the statutes and guidelines of the California Environmental Quality Act, section 21000 et seq. of the Public Resources Code ("CEQA"), and all requirements of section 17210 et seq. of the Education Code, including requirements for a Phase I environmental assessment acceptable to the State of California Department of Education and Department of Toxic Substances Control.

Certification of: Delivery Firm/Transporter Supplier Manufacturer
 Wholesaler Broker Retailer
 Distributor Other _____

Type of Entity Corporation General Partnership
 Limited Partnership Limited Liability Company
 Sole Proprietorship Other _____

Name of firm ("Firm"): _____

Mailing address: _____

Addresses of branch office used for this Project: _____

If subsidiary, name and address of parent company: _____

By my signature below, I hereby certify that I am aware of section 25260 of the Health and Safety Code and the sections referenced therein regarding the definition of hazardous material. I further certify on behalf of the Firm that all soils, aggregates, or related materials provided, delivered, and/or supplied or that will be provided, delivered, and/or supplied by this Firm to the Project Site are free of any and all hazardous material as defined in section 25260 of the Health and Safety Code. I further certify that I am authorized to make this certification on behalf of the Firm.

Date: _____

Proper Name of Firm: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

CRIMINAL BACKGROUND INVESTIGATION
/FINGERPRINTING CERTIFICATION

PROJECT/CONTRACT NO.: **HJHS Baseball/Softball/Golf Facility 0520-442** between the Sacramento City Unified School District ("District") and _____ ("Contractor" or "Bidder") ("Contract" or "Project").

The undersigned does hereby certify to the District that I am a representative of the Contractor currently under contract with the District; that I am familiar with the facts herein certified; and that I am authorized and qualified to execute this certificate on behalf of Contractor.

Contractor certifies that it has taken at least one of the following actions (check all that apply):

- Pursuant to Education Code section 45125.2(a), Contractor has installed or will install, prior to commencement of Work, a physical barrier at the Work Site, that will limit contact between Contractor's employees, Subcontractors or suppliers and District pupils at all times; and/or
- Pursuant to Education Code section 45125.2(a), Contractor certifies that all employees will be under the continual supervision of, and monitored by, an employee of the Contractor who the California Department of Justice ("DOJ") has ascertained, or as described below, will ascertain, has not been convicted of a violent or serious felony. The name and title of the employee who will be supervising Contractor's and its subcontractors' or suppliers' employees is:

Name: _____

Title: _____

NOTE: If Contractor is a sole proprietor, and elects the above option, Contractor must have the above-named employee's fingerprints prepared and submitted by District for submission to the DOJ, in accordance with Education Code section 45125.1(h). No work shall commence until such determination by DOJ has been made.

- Pursuant to Education Code section 45125.2(a), the District will take appropriate steps to protect the safety of any pupils that may come in contact with Contractor's employees, subcontractors or suppliers so that the fingerprinting and criminal background investigation requirements of Education Code section 45125.2 shall not apply to Contractor under the Contract.
- The Work on the Contract is either (i) at an unoccupied school site and no employee of Contractor and/or subcontractor or supplier of any tier of the Contract shall come in contact with the District pupils or (ii) if Contractor's employees or any subcontractor or supplier of any tier of the Contract interacts with pupils, such interaction shall only take place under the immediate supervision and control of the pupil's parent or guardian or a school employee, so that the fingerprinting and criminal background investigation requirements of Education Code section 45125.1 shall not apply to Contractor under the Contract.

- The Contractor, who is not a sole proprietor, has complied with the fingerprinting requirements of Education Code section 45125.1 with respect to all Contractor's employees and all of its Subcontractors' employees who may have contact with District pupils in the course of providing services pursuant to the Contract, and the DOJ has determined (A) that none of those employees has been convicted of a felony, as that term is defined in Education Code section 45122.1 and/or (B) that the prohibition does not apply to an employee as provided by Education Code section 45125.1(e)(2) or (3). When the Contractor performs the criminal background check, it shall immediately provide any subsequent arrest and conviction information it receives to the District pursuant to the subsequent arrest service. No work shall commence until the Department of Justice ascertains that Contractor's employees and any subcontractors' employees have not been convicted of a felony as defined in Government Code Section 45122.1.

A complete and accurate list of Contractor's employees and of all of its subcontractors' employees who may come in contact with District pupils during the course and scope of the Contract is attached hereto as ATTACHMENT "A;" and/or

- The Contractor is a sole proprietor and intends to comply with the fingerprinting requirements of Education Code section 45125.1(h) with respect to all Contractor's employees who may have contact with District pupils in the course of providing services pursuant to the Contract, and hereby agrees to the District's preparation and submission of fingerprints such that the DOJ may determine (A) that none of those employees has been convicted of a felony, as that term is defined in Education Code section 45122.1 and/or (B) that the prohibition does not apply to an employee as provided by Education Code section 45125.1(e)(2) or (3). No work shall commence until the Department of Justice ascertains that Contractor's employees and any subcontractors' employees have not been convicted of a felony as defined in Government Code Section 45122.1.

Contractor's responsibility for background clearance extends to all of its employees, Subcontractors or suppliers, and employees of Subcontractors or suppliers coming into contact with District pupils regardless of whether they are designated as employees or acting as independent contractors of the Contractor.

[CONTINUED ON NEXT PAGE]

ATTACHMENT "A"

List of Employees/Subcontractors

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

If further space is required for the list of employees/subcontractors, attach additional copies of this page.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

REGISTERED SUBCONTRACTORS LIST
(Labor Code Section 1771.1)

PROJECT: **HJHS Baseball/Softball/Golf Facility 0520-442**

Date Submitted (for Updates): _____

Contractor acknowledges and agrees that it must clearly set forth below the name and Department of Industrial Relations (DIR) registration number of each subcontractor **for all tiers** who will perform work or labor or render service to Contractor or its subcontractors in or about the construction of the Work **at least two (2) weeks before the subcontractor is scheduled to perform work**. This document is to be updated as all tiers of subcontractors are identified.

Contractor acknowledges and agrees that, if Contractor fails to list as to any subcontractor of any tier who performs any portion of Work, the Contract is subject to cancellation and the Contractor will be subjected to penalty under applicable law.

If further space is required for the list of proposed subcontractors, attach additional copies of page 2 showing the required information, as indicated below.

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Date: _____

Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

POST BID INTERVIEW

PART 1 – GENERAL

1.01 SUMMARY

If requested by the District, this Section requires the apparent low bidder to attend and participate in a Post Bid Interview with the Construction Manager, prior to award of any contract by the District. The Post Bid Interview will be scheduled by the Construction Manager within three (3) calendar days after the date of bid.

1.02 REQUIRED ATTENDANCE

- A. A duly authorized representative of the apparent low bidder is required to attend the Post Bid Interview, in person.
- B. The apparent low bidder's authorized representative(s) must have (1) knowledge of how the bid submitted was prepared, (2) the person responsible for supervising performance of the Work, and (3) the authority to bind the apparent low bidder.
- C. Failure to attend the Post Bid Interview as scheduled will be considered just cause for the District to reject the Bid as nonresponsive.

1.03 POST BID INTERVIEW PROCEDURE

- A. The Construction Manager will review the Bid with the attendees.
- B. The Construction Manager will review the Contract Documents with the attendees, including but not limited to:
 - (1) Insurance
 - (2) Bonding
 - (3) Addenda
 - (4) Pre-Bid Clarifications
 - (5) Scope of Work
 - (6) Bid Packages Descriptions
 - (7) Bid Alternates
 - (8) Contract Plans
 - (9) Contract Specifications
 - (10) Project Schedule and Schedule Requirements

- (11) Critical Dates Requirement for Other Bid Packages
- (12) Prevailing Wage Requirements
- (13) Liquidated Damages
- (14) Required Documentation for Contract Administration
- (15) Contract Coordination Requirements

1.04 POST BID INTERVIEW DOCUMENTATION

The Construction Manager will document the Post Bid Interview on the form attached to this Section. Both the apparent low bidder and the Construction Manager are required to sign the Post Bid Interview Documentation.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

POST BID INTERVIEW

CONSTRUCTION MANAGER

[Name]
[Address 1]
[Address 2]
[Phone] [Fax]

BIDDER: _____

DATE: _____ TIME: _____ PHONE: _____

1. INTRODUCTIONS:

Present

a.

CONTRACTOR

CONTRACTOR

[CM]

[CM]

2. PROPOSED CONTRACT:

3. PURPOSE OF INTERVIEW IS TO ASSURE A MUTUAL UNDERSTANDING OF THE FOLLOWING:

- a. Do you acknowledge submission of a complete and accurate bid? Yes No
- b. Do you acknowledge the Bid Document submittal timelines after NOA and NTP and can you meet those timelines? Yes No
- c. Do you acknowledge the requirements for the escrow of bid documents? Yes No
- d. Are you comfortable with your listed subcontractors? Yes No

CONTRACTUAL REQUIREMENTS:

4.

- a. Do you understand you are a prime contractor? Yes No
- b. Can you meet specified insurance requirements? Yes No
 - (1) Do any of your policies that require Additional Insured endorsements exceed the minimum coverage requirements? Yes No
 - (2) Are you requesting that the District accept an Excess Liability Insurance Policy to meet the policy limit? Yes No

- (3) Will there be a gap between the per occurrence amount of any underlying policy and the start of the coverage under the Umbrella or Excess Liability Insurance Policy? Yes No
- c. Will you provide the Performance Bond and Labor and Material Bond for 100% of the Contract Price as stipulated? Yes No
 - (1) Cost for bonds: _____% Yes No
 - (2) Is the cost of your bonds in your base bid? Yes No
 - (3) Is your surety licensed to issue bonds in California? Yes No
 - d. Do you understand the fingerprinting requirements? Yes No
 - e. Is it understood that all workers must be paid prevailing wage? Yes No
- f. Is it understood that all subcontractors of every tier must be registered as a public works contractor with the Department of Industrial Relations? Yes No
- 5. SCOPE OF WORK:
 - a. Acknowledged Receipt of Addenda Yes No
 - b. Are the costs for addenda items included in your bid? (if applicable) Yes No
 - c. Do you have a complete understanding of your Scope of Work under the proposed Agreement? Yes No
 - d. You have re-reviewed the documents and understand the Scope of the Work. Are there any items that require clarification? If yes, please identify them. Yes No
 - (1) _____
 - _____
 - (2) _____
 - _____
 - (3) _____
 - _____
- Is (are) there additional cost(s) for the above item(s)? Yes No
- e. Is the cost for allowance included in your bid? Yes No
- f. Have you reviewed bid alternative(s) #1-____? (if applicable) Yes No

- g. Are the costs for bid alternatives included in your bid? Yes No
 - h. Are the plans and specifications clear and understandable to your satisfaction? Yes No
 - i. Do you acknowledge that the time to submit notice of requests for substitution of specified materials has expired? Yes No
6. SCHEDULE:
- a. Do you acknowledge and agree to the stipulated completion dates and milestones in the contract? Yes No
 - (1) Will you provide a detailed construction schedule to _____ within the required ten (10) days of the Notice to Proceed, per the contract? Yes No
 - (2) Can you meet the submittal deadline? Yes No
 - (3) It is understood that the Project schedule is critical and that that weekend and overtime work may be required to meet the milestones. Yes No
 - (4) It is understood that if rain does occur, then all dewatering and protection of work is required, per the contract. Yes No
If not, what do you believe must change and why? _____

 - b. Identify critical materials, deliveries, long lead items and other dependencies, including Owner Furnished items that could affect the completion of your work. Yes No
 - (1) _____
 - (2) _____
 - (3) _____
 - (4) _____
 - (5) _____
 - c. Do you understand that there is going to be maintenance and other construction taking place on site during the course of the project? Yes No

7. EXECUTION OF WORK

- a. Do you understand the access to the site? Yes No
- b. Do you understand the staging area restrictions? Yes No
- c. Have you included protection of [asphalt, floors, and roofs]? Yes No
- d. Do you understand that the site is occupied by students, teachers, administrators, parents, etc.? Yes No

8. CONTRACTOR COMMENTS/SUGGESTIONS:

- (1) _____
- (2) _____
- (3) _____
- (4) _____

9. CONTRACTOR

You agree the information contained herein is part of your contractual obligations. Your signature acknowledges your agreement to perform all Work in the Contract Documents, and that costs for all Work are included in your bid.

The foregoing information is true and accurate, and I am authorized to sign as an officer of the company I am representing.

[Company Name]

Signature _____ Title: _____

Date: _____

10. CONSTRUCTION MANAGER

Signature _____ Title: _____

Date: _____

Title of Document: POST BID INTERVIEW

Number of Pages: _____

Date of Document: _____

END OF DOCUMENT

DOCUMENT 00 52 13

AGREEMENT

THIS AGREEMENT IS MADE AND ENTERED INTO THIS _____ DAY OF _____, 20____, by and between the Sacramento City Unified School District ("District") and _____ ("Contractor") ("Agreement").

WITNESSETH: That the parties hereto have mutually covenanted and agreed, and by these presents do covenant and agree with each other, as follows:

- 1. The Work:** Contractor agrees to furnish all tools, equipment, apparatus, facilities, labor, and material necessary to perform and complete in a good and workmanlike manner, the work of the following project:

HJHS Baseball/Softball/Golf Facility 0520-442

("Project" or "Contract" or "Work")

It is understood and agreed that the Work shall be performed and completed as required in the Contract Documents including, without limitation, the Drawings and Specifications and submission of all documents required to secure funding or by the Division of the State Architect for close-out of the Project, under the direction and supervision of, and subject to the approval of, the District or its authorized representative.

- 2. The Contract Documents:** The complete Contract consists of all Contract Documents as defined in the General Conditions and incorporated herein by this reference. Any and all obligations of the District and Contractor are fully set forth and described in the Contract Documents. All Contract Documents are intended to cooperate so that any Work called for in one and not mentioned in the other or vice versa is to be executed the same as if mentioned in all Contract Documents.
- 3. Interpretation of Contract Documents:** Should any question arise concerning the intent or meaning of Contract Documents, including the Drawings or Specifications, the question shall be submitted to the District for interpretation. If a conflict exists in the Contract Documents, valid, written modifications, beginning with the most recent, shall control over this Agreement (if any), which shall control over the Special Conditions, which shall control over any Supplemental Conditions, which shall control over the General Conditions, which shall control over the remaining Division 0 documents, which shall control over Division 1 Documents which shall control over Division 2 through Division 49 documents, which shall control over figured dimensions, which shall control over large-scale drawings, which shall control over small-scale drawings. In the case of a discrepancy or ambiguity solely between and among the Drawings and Specifications, the discrepancy or ambiguity shall be resolved in favor of the interpretation that will provide District with the functionally complete and operable Project described in the Drawings and Specifications. In no case shall a document calling for lower quality and/or quantity material or workmanship control. The decision of the District in the matter shall be final.
- 4. Time for Completion:** It is hereby understood and agreed that the Work under this Contract shall be completed within **Two hundred thirty-four (234)** consecutive calendar days ("Contract Time") from the date specified in the District's Notice to Proceed. This includes construction, punchlist and project

acceptance, and completion of closeout in coordination with the schedule provided at bid time.

- 5. Completion - Extension of Time:** Should the Contractor fail to complete this Contract, and the Work provided herein, within the time fixed for completion, due allowance being made for the contingencies provided for herein, the Contractor shall become liable to the District for all loss and damage that the District may suffer on account thereof. The Contractor shall coordinate its Work with the Work of all other contractors. The District shall not be liable for delays resulting from Contractor's failure to coordinate its Work with other contractors in a manner that will allow timely completion of Contractor's Work. Contractor shall be liable for delays to other contractors caused by Contractor's failure to coordinate its Work with the Work of other contractors.
- 6. Liquidated Damages:** Time is of the essence for all work under this Agreement. It is hereby understood and agreed that it is and will be difficult and/or impossible to ascertain and determine the actual damage that the District will sustain in the event of and by reason of Contractor's delay; therefore, Contractor agrees that it shall pay to the District the sum of Two Thousand and No/100 dollars (\$2,000) per day as liquidated damages for each and every day's delay beyond the time herein prescribed in completion of the Work.

It is hereby understood and agreed that this amount is not a penalty.

In the event that any portion of the liquidated damages is not paid to the District, the District may deduct that amount from any money due or that may become due the Contractor under this Agreement, and such deduction does not constitute a withholding or penalty. The District's right to assess liquidated damages is as indicated herein and in the General Conditions.

The time during which the Contract is delayed for cause, as hereinafter specified, may extend the time of completion for a reasonable time as the District may grant, provided that Contractor has complied with the claims procedure of the Contract Documents. This provision does not exclude the recovery of damages by either party under other provisions in the Contract Documents.

- 7. Loss Or Damage:** The District and its agents and authorized representatives shall not in any way or manner be answerable or suffer loss, damage, expense, or liability for any loss or damage that may happen to the Work, or any part thereof, or in or about the same during its construction and before acceptance, and the Contractor shall assume all liabilities of every kind or nature arising from the Work, either by accident, negligence, theft, vandalism, or any cause whatsoever; and shall hold the District and its agents and authorized representatives harmless from all liability of every kind and nature arising from accident, negligence, or any cause whatsoever.
- 8. Limitation Of District Liability:** District's financial obligations under this Contract shall be limited to the payment of the compensation provided in this Contract. Notwithstanding any other provision of this Contract, in no event shall District be liable, regardless of whether any claim is based on contract or tort, for any special, consequential, indirect or incidental damages, including, but not limited to, lost profits or revenue, lost bonding capacity, arising out of or in

connection with this Contract for the services performed in connection with this Contract.

- 9. Insurance and Bonds:** Prior to issuance of the Notice to Proceed by the District, Contractor shall provide all required certificates of insurance, insurance endorsements, and payment and performance bonds as evidence thereof.
- 10. Prosecution of Work:** If the Contractor should neglect to prosecute the Work properly or fail to perform any provisions of this Contract, the District, may, pursuant to the General Conditions and without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.
- 11. Authority of Architect, Project Inspector, and DSA:** Contractor hereby acknowledges that the Architect(s), the Project Inspector(s), and the Division of the State Architect ("DSA") have authority to approve and/or suspend Work if the Contractor's Work does not comply with the requirements of the Contract Documents, Title 24 of the California Code of Regulations, and all applicable laws and regulations. The Contractor shall be liable for any delay caused by its non-compliant Work.
- 12. Assignment of Contract:** Neither the Contract, nor any part thereof, nor any moneys due or to become due thereunder, may be assigned by the Contractor without the prior written approval of the District, nor without the written consent of the Surety on the Contractor's Performance Bond (the "Surety"), unless the Surety has waived in writing its right to notice of assignment.
- 13. Classification of Contractor's License:** Contractor hereby acknowledges that it currently holds valid Type **A General Engineering and/or B General Building** Contractor's license(s) issued by the State of California, Contractors' State License Board, in accordance with division 3, chapter 9, of the Business and Professions Code and in the classification called for in the Contract Documents.
- 14. Registration as Public Works Contractor:** The Contractor and all Subcontractors currently are registered as public works contractors with the Department of Industrial Relations, State of California, in accordance with Labor Code section 1771.1.
- 15. Payment of Prevailing Wages:** The Contractor and all Subcontractors shall pay all workers on all Work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to sections 1770 et seq. of the California Labor Code.
- 16. Labor Compliance Monitoring and Enforcement:** This Project is subject to labor compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code section 1771.4 and Title 8 of the California Code of Regulations. Contractor specifically acknowledges and understands that it shall perform the Work of this Agreement while complying with all the applicable provisions of Division 2, Part 7, Chapter 1, of the Labor Code, including, without limitation, the requirement that the Contractor and all of its

Subcontractors shall timely submit complete and accurate electronic certified payroll records as required by the Contract Documents, or the District may not issue payment.

17. Contract Price: In consideration of the foregoing covenants, promises, and agreements on the part of the Contractor, and the strict and literal fulfillment of each and every covenant, promise, and agreement, and as compensation agreed upon for the Work and construction, erection, and completion as aforesaid, the District covenants, promises, and agrees that it will well and truly pay and cause to be paid to the Contractor in full, and as the full Contract Price and compensation for construction, erection, and completion of the Work hereinabove agreed to be performed by the Contractor, the following price:

_____ **Dollars**
(\$ _____),

in lawful money of the United States, which sum is to be paid according to the schedule provided by the Contractor and accepted by the District and subject to additions and deductions as provided in the Contract. This amount supersedes any previously stated and/or agreed to amount(s).

18. No Representations: No representations have been made other than as set forth in writing in the Contract Documents, including this Agreement. Each of the Parties to this Agreement warrants that it has carefully read and understood the terms and conditions of this Agreement and all Contract Documents, and that it has not relied upon the representations or advice of any other Party or any attorney not its own.

19. Entire Agreement: The Contract Documents, including this Agreement, set forth the entire agreement between the parties hereto and fully supersede any and all prior agreements, understandings, written or oral, between the parties hereto pertaining to the subject matter thereof.

20. Severability: If any term, covenant, condition, or provision in any of the Contract Documents is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions in the Contract Documents shall remain in full force and effect and shall in no way be affected, impaired, or invalidated thereby.

21. Authority of Signatories: Each party has the full power and authority to enter into and perform this Contract, and the person signing this Contract on behalf of each party has been properly authorized and empowered to enter into this Contract. This Contract may be executed in one or more counterparts, each of which shall be deemed an original. For this Agreement, and for all Contract Documents requiring a signature, a facsimile or electronic signature shall be deemed to be the equivalent of the actual original signature. All counterparts so executed shall constitute one Contract binding all the Parties hereto.

IN WITNESS WHEREOF, accepted and agreed on the date indicated above:

[CONTRACTOR NAME]

**SACRAMENTO CITY UNIFIED SCHOOL
DISTRICT**

By: _____

By: _____

Title: _____

Title: Rose F. Ramos, Chief Business &
Operations Officer

NOTE: If the party executing this Contract is a corporation, a certified copy of the by-laws, or of the resolution of the Board of Directors, authorizing the officers of said corporation to execute the Contract and the bonds required thereby must be attached hereto.

END OF DOCUMENT

ESCROW BID DOCUMENTATION

1. Requirement to Escrow Bid Documentation

- a. Contractor shall submit, within **SEVEN (7)** calendar days after the date of the Notice of Award, one copy of all documentary information received or generated by Contractor in preparation of bid prices for this Contract, as specified herein. This material is referred to herein as "Escrow Bid Documentation." The Escrow Bid Documentation of the Contractor will be held in escrow for the duration of the Contract.
- b. Contractor agrees, as a condition of award of the Contract, that the Escrow Bid Documentation constitutes all written information used in the preparation of its bid, and that no other written bid preparation information shall be considered in resolving disputes or claims. Contractor also agrees that nothing in the Escrow Bid Documentation shall change or modify the terms or conditions of the Contract Documents.
- c. The Escrow Bid Documentation will not be opened by District except as indicated herein. The Escrow Bid Documentation will be used only for the resolution of change orders and claims disputes.
- d. Contractor's submission of the Escrow Bid Documentation, as with the bonds and insurance documents required, is considered an essential part of the Contract award. Should the Contractor fail to make the submission within the allowed time specified above, District may deem the Contractor to have failed to enter into the Contract, and the Contractor shall forfeit the amount of its bid security, accompanying the Contractor's bid, and District may award the Contract to the next lowest responsive responsible bidder.
- e. NO PAYMENTS WILL BE MADE, NOR WILL DISTRICT ACCEPT PROPOSED CHANGE ORDERS UNTIL THE ABOVE REQUIRED INFORMATION IS SUBMITTED AND APPROVED.
- f. The Escrow Bid Documentation shall be submitted in person by an authorized representative of the Contractor to the District.

2. Ownership of Escrow Bid Documentation

- a. The Escrow Bid Documentation is, and shall always remain, the property of Contractor, subject to review by District, as provided herein.
- b. Escrow Bid Documentation constitute trade secrets, not known outside Contractor's business, known only to a limited extent and only by a limited number of employees of Contractor, safeguarded while in Contractor's possession, extremely valuable to Contractor, and could be extremely valuable to Contractor's competitors by virtue of reflecting Contractor's contemplated techniques of construction. Subject to the provisions herein, District agrees to safeguard the Escrow Bid Documentation, and all

information contained therein, against disclosure to the fullest extent permitted by law.

3. Format and Contents of Escrow Bid Documentation

- a. Contractor may submit Escrow Bid Documentation in its usual cost-estimating format; a standard format is not required. The Escrow Bid Documentation shall be submitted in the language (e.g., English) of the specification.
- b. Escrow Bid Documentation must clearly itemize the estimated costs of performing the work of each bid item contained in the bid schedule, separating bid items into sub-items as required to present a detailed cost estimate and allow a detailed cost review. The Escrow Bid Documentation shall include all subcontractor bids or quotes, supplier bids or quotes, quantity takeoffs, crews, equipment, calculations of rates of production and progress, copies of quotes from subcontractors and suppliers, and memoranda, narratives, add/deduct sheets, and all other information used by the Contractor to arrive at the prices contained in the bid proposal. Estimated costs should be broken down into Contractor's usual estimate categories such as direct labor, repair labor, equipment ownership and operation, expendable materials, permanent materials, and subcontract costs as appropriate. All labor rates must be broken down to specify any and all burden costs including, but not limited to, health and welfare pay, vacation and holiday pay, pension contributions, training rates, benefits of any kind, insurance of any kind, workers' compensation, liability insurance, truck expenses, supply expenses of any kind, payroll taxes, and any other taxes of any kind. Plant and equipment and indirect costs should be detailed in the Contractor's usual format. The Contractor's allocation of indirect costs, contingencies, markup, and other items to each bid item shall be identified.
- c. All costs shall be identified. For bid items amounting to less than \$10,000, estimated unit costs are acceptable without a detailed cost estimate, provided that labor, equipment, materials, and subcontracts, as applicable, are included and provided that indirect costs, contingencies, and markup, as applicable, are allocated.
- d. Bid Documentation provided by District should not be included in the Escrow Bid Documentation unless needed to comply with the following requirements.

4. Submittal of Escrow Bid Documentation

- a. The Escrow Bid Documentation shall be submitted by the Contractor in a sealed container within **SEVEN (7)** calendar days after the date of the Notice of Award. The container shall be clearly marked on the outside with the Contractor's name, date of submittal, project name and the words "Escrow Bid Documentation – Intended to be opened in the presence of Authorized Representatives of Both District and Contractor".
- b. By submitting Escrow Bid Documentation, Contractor represents that the material in the Escrow Bid Documentation constitutes all the documentary information used in preparation of the bid and that the Contractor has personally examined the contents of the Escrow Bid Documentation container and has found that the documents in the container are complete.

- c. If Contractor's proposal is based upon subcontracting any part of the work, each subcontractor whose total subcontract price exceeds 5 percent of the total contract price proposed by Contractor, shall provide separate Escrow Documents to be included with those of Contractor. Those documents shall be opened and examined in the same manner and at the same time as the examination described above for Contractor.
- d. If Contractor wishes to subcontract any portion of the Work after award, District retains the right to require Contractor to submit Escrow Documents for the Subcontractor before the subcontract is approved.

5. **Storage, Examination and Final Disposition of Escrow Bid Documentation**

- a. The Escrow Bid Documentation will be placed in escrow, for the life of the Contract, in a mutually agreeable institution. The cost of storage will be paid by Contractor for the duration of the project until final Contract payment. The storage facilities shall be the appropriate size for all the Escrow Bid Documentation and located conveniently to both District's and Contractor's offices.
- b. The Escrow Bid Documentation shall be examined by both District and Contractor, at any time deemed necessary by either District or Contractor, to assist in the negotiation of price adjustments and change orders or the settlement of disputes and claims. In the case of legal proceedings, Escrow Bid Documentation shall be used subject to the terms of an appropriate protective order if requested by Contractor and ordered by a court of competent jurisdiction. Examination of the Escrow Bid Documentation is subject to the following conditions:
 - (1) As trade secrets, the Escrow Bid Documentation is proprietary and confidential to the extent allowed by law.
 - (2) District and Contractor shall each designate, in writing to the other party **SEVEN (7)** calendar days prior to any examination, the names of representatives who are authorized to examine the Escrow Bid Documentation. No other person shall have access to the Escrow Bid Documentation.
 - (3) Access to the documents may take place only in the presence of duly designated representatives of the District and Contractor. If Contractor fails to designate a representative or appear for joint examination on **SEVEN (7)** calendar days' notice, then the District representative may examine the Escrow Bid Documents alone upon an additional **THREE (3)** calendar days' notice if a representative of the Contractor does not appear at the time set.
 - (4) If a subcontractor has submitted sealed information to be included in the Escrow Bid Documents, access to those documents may take place only in the presence of a duly designated representative of the District, Contractor and that subcontractor. If that subcontractor fails to designate a representative or appear for joint examination on **SEVEN (7)** calendar days' notice, then the District representative and/or the

Contractor may examine the Escrow Bid Documentation without that subcontractor present upon an additional **THREE (3)** calendar days' notice if a representative of that subcontractor does not appear at the time set.

- c. The Escrow Bid Documentation will be returned to Contractor at such time as the Contract has been completed and final settlement has been achieved.

END OF DOCUMENT

ESCROW AGREEMENT IN LIEU OF RETENTION
(Public Contract Code Section 22300)

(Note: Contractor must use this form.)

This Escrow Agreement in Lieu of Retention ("Escrow Agreement") is made and entered into this _____ day of _____, 20____, by and between the Sacramento City Unified School District ("District"), whose address is 5735 47th Avenue, Sacramento, California 95824, and _____ ("Contractor"), whose address is _____, and _____ ("Escrow Agent"), a state or federally chartered bank in the state of California, whose address is _____.

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

11. Pursuant to section 22300 of Public Contract Code of the State of California, which is hereby incorporated by reference, Contractor has the following two (2) options:
- Deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by District pursuant to the Construction Contract No. ____ entered into between District and Contractor for the _____ Project, in the amount of _____ Dollars (\$_____) dated, _____, 20____, (the "Contract"); **or**
 - On written request of Contractor, District shall make payments of the retention earnings for the above referenced Contract directly to Escrow Agent.

When Contractor deposits the securities as a substitute for Contract earnings (first option), Escrow Agent shall notify District within ten (10) calendar days of the deposit. The market value of the securities at the time of substitution and at all times from substitution until the termination of the Escrow Agreement shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between District and Contractor.

Securities shall be held in the name of Sacramento City Unified School District, and shall designate Contractor as beneficial owner.

12. District shall make progress payments to Contractor for those funds which otherwise would be withheld from progress payments pursuant to Contract provisions, provided that Escrow Agent holds securities in form and amount specified above.
13. When District makes payment of retentions earned directly to Escrow Agent, Escrow Agent shall hold them for the benefit of Contractor until the time that the escrow created under this Escrow Agreement is terminated. Contractor may direct the investment of the payments into securities. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the Parties shall be equally applicable and binding when District pays Escrow Agent directly.

14. Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account, and all expenses of District. The District will charge Contractor \$_____ for each of District's deposits to the escrow account. These expenses and payment terms shall be determined by District, Contractor, and Escrow Agent.
15. Interest earned on securities or money market accounts held in escrow and all interest earned on that interest shall be for sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to District.
16. 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 District to Escrow Agent that District consents to withdrawal of amount sought to be withdrawn by Contractor.
17. District shall have the right to draw upon the securities and/or withdraw amounts from the Escrow Account in the event of default by Contractor. Upon seven (7) days' written notice to Escrow Agent from District of the default, if applicable, Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by District. Escrow Agent shall not be authorized to determine the validity of any notice of default given by District pursuant to this paragraph, and shall promptly comply with District's instructions to pay over said escrowed assets. Escrow Agent further agrees to not interplead the escrowed assets in response to a conflicting demand.
18. Upon receipt of written notification from District certifying that the Contract is final and complete, and that 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 monies and securities on deposit and payments of fees and charges.
19. Escrow Agent shall rely on written notifications from District and Contractor pursuant to Paragraphs 5 through 8, inclusive, of this Escrow Agreement and District and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of securities and interest as set forth above.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

20. Names of persons who are authorized to give written notice or to receive written notice on behalf of District and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

On behalf of District:

Title

Name

Signature

Address

On behalf of Contractor:

Title

Name

Signature

Address

On behalf of Escrow Agent:

Title

Name

Signature

Address

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

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

On behalf of District:

Title

Name

Signature

Address

On behalf of Contractor:

Title

Name

Signature

Address

END OF DOCUMENT

PERFORMANCE BOND
(100% of Contract Price)

(Note: Contractor must use this form, NOT a surety company form.)

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the governing board ("Board") of the Sacramento City Unified School District, ("District") and _____ ("Principal") have entered into a contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to perform the following project:

HJHS Baseball/Softball/Golf Facility 0520-442

("Project" or "Contract") which Contract dated _____, 20____, and all of the Contract Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof; and

WHEREAS, said Principal is required under the terms of the Contract to furnish a bond for the faithful performance of the Contract.

NOW, THEREFORE, the Principal and _____ ("Surety") are held and firmly bound unto the Board of the District in the penal sum of

_____ Dollars (\$_____), lawful money of the United States, for the payment of which sum well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents, to:

- Promptly perform all the work required to complete the Project; and
- Pay to the District all damages the District incurs as a result of the Principal's failure to perform all the Work required to complete the Project.

Or, at the District's sole discretion and election, the Surety shall obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by the District of the lowest responsible bidder, arrange for a contract between such bidder and the District and make available as Work progresses sufficient funds to pay the cost of completion less the "balance of the Contract Price," and to pay and perform all obligations of Principals under the Contract, including, without limitation, all obligations with respect to warranties, guarantees and the payment of liquidated damages. The term "balance of the Contract Price," as used in this paragraph, shall mean the total amount payable to Principal by the District under the Contract and any modifications thereto, less the amount previously paid by the District to the Principal, less any withholdings by the District allowed under the Contract. District shall not be required or obligated to accept a tender of a completion contractor from the Surety for any or no reason.

The condition of the obligation is such that, if the above bound Principal, its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and agreements in the Contract and any alteration

thereof made as therein provided, on its part to be kept and performed at the time and in the intent and meaning, including all contractual guarantees and warranties of materials and workmanship, and shall indemnify and save harmless the District, its trustees, officers and agents, as therein stipulated, then this obligation shall become null and void, otherwise it shall be and remain in full force and virtue.

Surety expressly agrees that the District may reject any contractor or subcontractor proposed by Surety to fulfill its obligations in the event of default by the Principal. Surety shall not utilize Principal in completing the Work nor shall Surety accept a Bid from Principal for completion of the Work if the District declares the Principal to be in default and notifies Surety of the District's objection to Principal's further participation in the completion of the Work.

As a condition precedent to the satisfactory completion of the Contract, the above obligation shall hold good for a period equal to the warranty and/or guarantee period of the Contract, during which time Surety's obligation shall continue if Contractor shall fail to make full, complete, and satisfactory repair and replacements and totally protect the District from loss or damage resulting from or caused by defective materials or faulty workmanship. The obligations of Surety hereunder shall continue so long as any obligation of Contractor remains. Nothing herein shall limit the District's rights or the Contractor or Surety's obligations under the Contract, law or equity, including, but not limited to, California Code of Civil Procedure section 337.15.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond. The Surety also stipulates and agrees that it shall not be exonerated or released from the obligation of this bond by any overpayment or underpayment by the District that is based upon estimates approved by the Architect. The Surety does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract or to the work or to the specifications.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on the _____ day of _____, 20____.

_____ Principal	_____ Surety
_____ By	_____ By
	_____ Name of California Agent of Surety
	_____ Address of California Agent of Surety
	_____ Telephone No. of California Agent of Surety

Contractor must attach a Notarial Acknowledgment for all Surety's signatures and a Power of Attorney and Certificate of Authority for Surety. The California Department of Insurance must authorize the Surety to be an admitted surety insurer.

END OF DOCUMENT

PAYMENT BOND
Contractor's Labor & Material Bond
(100% Of Contract Price)

(Note: Contractor must use this form, NOT a surety company form.)

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the governing board ("Board") of the Sacramento City Unified School District, ("District") and _____, ("Principal") have entered into a contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to perform the following project:

HJHS Baseball/Softball/Golf Facility 0520-442

("Project" or "Contract") which Contract dated _____, 20____, and all of the Contract Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof; and

WHEREAS, pursuant to law and the Contract, the Principal is required, before entering upon the performance of the work, to file a good and sufficient bond with the body by which the Contract is awarded in an amount equal to one hundred percent (100%) of the Contract price, to secure the claims to which reference is made in sections 9000 through 9510 and 9550 through 9566 of the Civil Code, and division 2, part 7, of the Labor Code.

NOW, THEREFORE, the Principal and _____ ("Surety") are held and firmly bound unto all laborers, material men, and other persons referred to in said statutes in the sum of _____ Dollars (\$_____), lawful money of the United States, being a sum not less than the total amount payable by the terms of Contract, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, or assigns, jointly and severally, by these presents.

The condition of this obligation is that if the Principal or any of its subcontractors, or their heirs, executors, administrators, successors, or assigns of any, all, or either of them shall fail to pay for any labor, materials, provisions, or other supplies, used in, upon, for or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Principal or any of his or its subcontractors of any tier under Section 13020 of the Unemployment Insurance Code with respect to such work or labor, that the Surety will pay the same in an amount not exceeding the amount herein above set forth, and also in case suit is brought upon this bond, will pay a reasonable attorney's fee to be awarded and fixed by the court, and to be taxed as costs and to be included in the judgment therein rendered.

It is hereby expressly stipulated and agreed that this bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file claims under section 9100 of the Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void; otherwise it shall be and remain in full force and affect.

And the Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of Contract or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension, alteration, or addition.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on the _____ day of _____, 20__.

_____	_____
Principal	Surety
_____	_____
By	By

	Name of California Agent of Surety

	Address of California Agent of Surety

	Telephone No. of California Agent of Surety

Contractor must attach a Notarial Acknowledgment for all Surety's signatures and a Power of Attorney and Certificate of Authority for Surety. The California Department of Insurance must authorize the Surety to be an admitted surety insurer.

END OF DOCUMENT

ALLOWANCE EXPENDITURE DIRECTIVE

Sacramento City Unified School District
 5735 47th Avenue
 Sacramento, CA 95824

ALLOWANCE EXPENDITURE DIRECTIVE NO.:

Contractor Name
 Address
 Address

Project: _____

Date: _____

Bid No.: _____

DSA File No.: _____

DSA Appl. No.: _____

The following parties agree to the terms of this Allowance Expenditure Directive ("AED"):

Reference	Description	Allowance Authorized for Expenditure
Request for AED # Requested by: Performed by: Reason:	[Description of unforeseen item relating to Work] [Requester] [Performer] [Reason]	\$

Total Contract Allowance Amount:	\$
Amount of Previously Approved Allowance Expenditure Directive(s):	\$
Amount of this Allowance Expenditure Directive:	\$

The undersigned Contractor approves the foregoing release of allowance for completion of each specified item, and agrees to furnish all labor, materials and services and perform all work necessary to complete any additional work specified for the consideration stated therein ("Work"). Submission of sums which have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act set forth under Government Code section 12650, et seq.

This Allowance Expenditure Directive must be signed by an authorized District representative.

It is expressly understood that the authorized allowance expenditure granted herein represents a full accord and satisfaction for any and all cost impacts of the items herein, and Contractor waives any and all further compensation based on the items herein. The value of the extra work or changes expressly includes any and all of the Contractor's costs

and expenses, and its subcontractors, both direct and indirect. Any costs, expenses, or damages not included are deemed waived.

Signatures:

CONTRACTOR: _____ Date: _____ By: _____ [Print Name and Title here]	CONSTRUCTION MANAGER: _____ Date: _____ By: _____ [Print Name and Title here]
SCUSD MANAGER III, FACILITIES PM: _____ Date: _____ By: <u>Brendin Swanson</u> [Print Name and Title here]	SCUSD DIRECTOR III FACILITIES MGMT: _____ Date: _____ By: <u>Chris Ralston</u> [Print Name and Title here]

END OF DOCUMENT

DAILY FORCE ACCOUNT REPORT

From: Contractor
[Name/Address]

To: Owner
[Name/Address]

Project: _____

Contractor hereby submits this Daily Force Account Report for Work performed, pursuant to Force Account Directive No. _____, on _____.
[Date of Work]

Contractor attests that the material, labor, and equipment itemized herein were used only on the force account work.

A. Material: *Attach all applicable invoices not provided in prior Daily Force Account Reports and complete the information below.*

Description	Unit Price	Quantity	Cost

Daily subtotal (w/out markup): \$ _____

B. Labor: *Labor must be fully Burdened. Attach timesheets, if applicable, and complete the information below.*

Name	Craft	Regular Hrs.	Rate	OT Hrs.	Rate

Daily subtotal (w/out markup): \$ _____

C. **Equipment:** Attach all applicable invoices not provided in prior Daily Force Account Reports and complete the information below.

Type / Model	Hrs. Operated	Rate

Daily subtotal (w/out markup): \$ _____

Complete based on information reported above.

	<u>WORK PERFORMED OTHER THAN BY CONTRACTOR</u>	<u>ADD</u>
(a)	<u>Material</u>	
(b)	<u>Add Labor</u>	
(c)	<u>Add Equipment</u>	
(d)	<u>Subtotal</u>	
(e)	<u>Add overhead and profit for any and all tiers of Subcontractor</u> , the total not to exceed ten percent (10%) of Item (d)	
(f)	<u>Subtotal</u>	
(g)	<u>Add Overhead and Profit for Contractor</u> , not to exceed five percent (5%) of Item (f)	
(h)	<u>Subtotal</u>	
(i)	<u>Add Bond and Insurance</u> , not to exceed two percent (2%) of Item (h)	
(j)	<u>TOTAL</u>	

	<u>WORK PERFORMED BY CONTRACTOR</u>	<u>ADD</u>
(a)	<u>Material</u>	
(b)	<u>Add Labor</u>	
(c)	<u>Add Equipment</u>	
(d)	<u>Subtotal</u>	
(e)	<u>Add Overhead and Profit for Contractor</u> , not to exceed fifteen percent (15%) of Item (d)	
(f)	<u>Subtotal</u>	
(g)	<u>TOTAL</u>	

Submission of sums which have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act (Gov. Code, § 12650 et seq.).

It is expressly understood that all force account work for the date stated above must be reported herein, and Contractor may not claim any labor, equipment, material or any other costs or expenses not reported herein. Contractor is not entitled to separately recover amounts for overhead or other indirect costs. Any costs, expenses, or damages not included are deemed waived.

SUBMITTED BY:

REVIEWED BY:

Contractor:

District:

[Name]

Date

[Name]

Date

District may require additional information from Contractor to review this Daily Force Account Report. Upon District's return of the Daily Force Account Report, Contractor may invoice the Work reflected therein. District's review and return of the Daily Force Account Report and/or payment for the force account work does not constitute acceptance of the Work or waiver of any Contract rights or criteria.

END OF DOCUMENT

PROPOSED CHANGE ORDER FORM

Sacramento City Unified School District
 5735 47th Avenue
 Sacramento, CA 95824

PCO NO.:

Project: _____
Bid No.: _____
RFI #: _____

Date: _____
DSA File No.: _____
DSA Appl. No.: _____

Contractor hereby submits for District’s review and evaluation this Proposed Change Order (“PCO”), submitted in accordance with and subject to the terms of the Contract Documents, including Sections 17.7 and 17.8 of the General Conditions. Any spaces left blank below are deemed no change to cost or time.

Contractor understands and acknowledges that documentation supporting Contractor’s PCO must be attached and included for District review and evaluation. Contractor further understands and acknowledges that failure to include documentation sufficient to, in District’s discretion, support some or all of the PCO, shall result in a rejected PCO.

	<u>WORK PERFORMED OTHER THAN BY CONTRACTOR</u>	<u>ADD</u>	<u>DEDUCT</u>
(h)	<u>Material</u> (attach suppliers’ invoice or itemized quantity and unit cost plus sales tax)		
(i)	<u>Add Labor</u> (attach itemized hours and rates, fully Burdened, and specify the hourly rate for each additional labor burden, for example, payroll taxes, fringe benefits, etc.)		
(j)	<u>Add Equipment</u> (attach suppliers’ invoice)		
(k)	<u>Subtotal</u>		
(l)	<u>Add overhead and profit for any and all tiers of Subcontractor</u> , the total not to exceed ten percent (10%) of Item (d)		
(m)	<u>Subtotal</u>		
(n)	<u>Add General Conditions</u> (if Time is Compensable) (attach supporting documentation)		
(o)	<u>Subtotal</u>		
(p)	<u>Add Overhead and Profit for Contractor</u> , not to exceed five percent (5%) of Item (h)		
(q)	<u>Subtotal</u>		
(r)	<u>TOTAL</u>		
(s)	<u>Time</u> (zero unless indicated; “TBD” not permitted)		____ Calendar Days

[REMAINDER OF PAGE LEFT BLANK INTENTIONALLY]

	WORK PERFORMED BY CONTRACTOR	ADD	DEDUCT
(t)	Material (attach itemized quantity and unit cost plus sales tax)		
(u)	Add Labor (attach itemized hours and rates, fully Burdened, and specify the hourly rate for each additional labor burden, for example, payroll taxes, fringe benefits, etc.)		
(v)	Add Equipment (attach suppliers' invoice)		
(w)	Add General Conditions (if Time is Compensable) (attach supporting documentation)		
(x)	Subtotal		
(y)	Add Overhead and Profit for Contractor , not to exceed fifteen percent (15%) of Item (e)		
(z)	Subtotal		
(aa)	TOTAL		
(bb)	Time (zero unless indicated; "TBD" not permitted)	_____ Calendar Days	

The undersigned Contractor approves the foregoing as to the changes, if any, to the Contract Price specified for each item, and as to the extension of time allowed, if any, for completion of the entire Work as stated herein, and agrees to furnish all labor, materials, and service, and perform all work necessary to complete any additional work specified for the consideration stated herein. Submission of sums which have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act set forth under Government Code section 12650 et seq. It is understood that the changes herein to the Contract shall only be effective when approved by the governing board of the District.

It is expressly understood that the value of the extra Work or changes expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project including, without limitation, cumulative impacts. Contractor is not entitled to separately recover amounts for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

SUBMITTED BY:

Contractor:

[Name]

Date

END OF DOCUMENT

CHANGE ORDER FORM

Sacramento City Unified School District
 5735 47th Avenue
 Sacramento, CA 95824

CHANGE ORDER NO.:

CHANGE ORDER

Project: _____
Bid No.: _____

Date: _____
DSA File No.: _____
DSA Appl. No.: _____

The following parties agree to the terms of this Change Order:

Owner: _____
 [Name / Address]

Contractor: _____
 [Name / Address]

Architect: _____
 [Name / Address]

Project Inspector: _____
 [Name / Address]

Reference	Description	Cost	Days Ext.
PCO # Requested by: Performed by: Reason:	[Description of change] [Requester] [Performer] [Reason]	\$	
PCO # Requested by: Performed by: Reason:	[Description of change] [Requester] [Performer] [Reason]	\$	
PCO # Requested by: Performed by: Reason:	[Description of change] [Requester] [Performer] [Reason]	\$	
Contract time will be adjusted as follows: Previous Completion Date: __[Date] _____[#] Calendar Days Extension (zero unless otherwise indicated) Current Completion Date: __[Date]	Original Contract Amount: Amount of Previously Approved Change Order(s): Amount of this Change Order: Contract Amount:	\$ \$ \$ \$	

The undersigned Contractor approves the foregoing as to the changes, if any, to the Contract Price specified for each item, and as to the extension of time allowed, if any, for

AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS

THIS AGREEMENT AND RELEASE OF CLAIMS ("Agreement and Release") IS MADE AND ENTERED INTO THIS _____ DAY OF _____, 20__ by and between the SACRAMENTO CITY UNIFIED SCHOOL DISTRICT ("District") and _____ ("Contractor"), whose place of business is _____.

RECITALS

WHEREAS, District and Contractor entered into PROJECT/CONTRACT NO.: _____ ("Contract" or "Project") in the County of Sacramento, California; and

WHEREAS, the Work under the Contract was completed on _____, and a Notice of Completion was recorded with the County Recorder on _____.

NOW, THEREFORE, it is mutually agreed between District and Contractor as follows:

AGREEMENT AND RELEASE

1. Contractor will only be assessed liquidated damages as detailed below:

- Original Contract Sum \$ _____
- Modified Contract Sum \$ _____
- Payment to Date \$ _____
- Liquidated Damages \$ _____
- Payment Due Contractor \$ _____

2. Subject to the provisions hereof, District shall forthwith pay to Contractor the undisputed sum of _____ Dollars (\$ _____) under the Contract, less any amounts represented by any notice to withhold funds on file with District as of the date of such payment.

3. Contractor acknowledges and hereby agrees that there are no unresolved or outstanding claims in dispute against District arising from the performance of work under the Contract, except for the claims described in Paragraph 4 and continuing obligations described in Paragraph 6. It is the intention of the parties in executing this Agreement and Release that this Agreement and Release shall be effective as a full, final and general release of all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities of Contractor against District and all of its respective agents, employees, trustees, inspectors, assignees, consultants and transferees, except for any Disputed Claim that may be set forth in Paragraph 4 and the continuing obligations described in Paragraph 6 hereof.

4. The following claims are disputed (hereinafter, the "Disputed Claims") and are specifically excluded from the operation of this Agreement and Release:

<u>Claim No.</u>	<u>Description of Claim</u>	<u>Amount of Claim</u>	<u>Date Claim Submitted</u>
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____

[If further space is required, attach additional sheets showing the required information.]

5. Consistent with California Public Contract Code section 7100, Contractor hereby agrees that, in consideration of the payment set forth in Paragraph 2 hereof, Contractor hereby releases and forever discharges District, all its agents, employees, inspectors, assignees, and transferees from any and all liability, claims, demands, actions, or causes of action of whatever kind or nature arising out of or in any way concerned with the Work under the Contract.
6. Guarantees and warranties for the Work, and any other continuing obligation of Contractor, including without limitation, the duty to defend, indemnify and hold harmless the District, shall remain in full force and effect as specified in the Contract Documents.
7. Contractor hereby waives the provisions of California Civil Code section 1542 which provides as follows:
- A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS THAT THE CREDITOR OR RELEASING PARTY DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE AND THAT, IF KNOWN BY HIM OR HER, WOULD HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR OR RELEASED PARTY.
8. The provisions of this Agreement and Release are contractual in nature and not mere recitals and shall be considered independent and severable. If any such provision or any part thereof shall be at any time held invalid in whole or in part under any federal, state, county, municipal, or other law, ruling, or regulations, then such provision, or part thereof, shall remain in force and effect to the extent permitted by law, and the remaining provisions of this Agreement and Release shall also remain in full force and effect, and shall be enforceable.

9. All rights of District shall survive completion of the Work or termination of Contract, and execution of this Release.

* * * CAUTION: THIS IS A RELEASE - READ BEFORE EXECUTING * * *

SACRAMENTO CITY UNIFIED SCHOOL DISTRICT

Signature: _____

Print Name: _____

Title: _____

CONTRACTOR: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

GUARANTEE FORM
(Print on Contractor/Subcontractor Letterhead)

_____ **[Contractor's Name]** hereby unconditionally guarantees that the Work performed at **HJHS Baseball/Softball/Golf Facility 0520-442** has been done in accordance with the requirements of the Contract therefore and further guarantees the Work of the contract to be and remain free of defects in workmanship and materials for a period of **two (2) years** from and after the recordation of the Notice of Completion of the Project and completion of all Contract obligations by the Contractor, including formal acceptance of the entire Project by the District, unless a longer guarantee period is called for by the Contract Documents, in which case the terms of the longer guarantee shall govern. The Contractor specifically waives any right to claim or rely on the statutory definition of completion set forth in Civil Code section 9200. The Contractor specifically acknowledges and agrees that completion shall mean the Contractor's complete performance of all Work required by the Contract Documents, amendments, change orders, construction change directives and punch lists, and the District's formal acceptance of the entire Project, without regard to prior occupancy, substantial completion doctrine, beneficial occupancy, or otherwise. The Contractor hereby agrees to repair or replace any and all Work, together with any adjacent Work which may have been damaged or displaced in so doing, that may prove to be not in accordance with the requirements of the Contract or that may be defective in its workmanship or materials within the guarantee period specified, without any expense whatsoever to the District, ordinary wear and tear and unusual abuse and neglect only excepted. The Contractor has provided contract bonds, which will remain in full force and effect during the guarantee period.

The Contractor further agrees that within ten (10) calendar days after being notified in writing by the District of any Work not in accordance with the requirements of the contract or any defects in the Work, it will commence and prosecute with due diligence all Work necessary to fulfill the terms of this guarantee, and to complete the Work within a period of time stipulated in writing. In the event it fails to so comply, Contractor does hereby authorize the District to proceed to have such Work done at the Contractor's expense and it will pay the cost thereof upon demand. The District shall be entitled to all costs, including reasonable attorneys' fees, necessarily incurred upon the Contractor's refusal to pay the above costs.

The guarantee period for corrected defective work shall continue for a duration equivalent to the original guarantee period.

Notwithstanding the foregoing paragraph, in the event of an emergency constituting an immediate hazard to the health or safety of the employees of the District, or its property or licensees, the District may undertake at the Contractor's expense without prior notice, all Work necessary to correct such hazardous condition when it was caused by the Work of the Contractor not being in accordance with the requirements of this contract, or being defective, and to charge the same to the Contractor as specified in the preceding paragraph.

The guarantee set forth herein is not intended by the parties, not shall it be construed, as in any way limiting or reducing the District's rights to enforce all terms of the Contract referenced hereinabove or the time for enforcement thereof. This guarantee is provided in addition to, and not in lieu of, the District's rights on such contract.

_____ Spec Section(s): _____
CONTRACTOR'S SIGNATURE

PRINT NAME

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GENERAL CONDITIONS

1. **CONTRACT TERMS AND DEFINITIONS**

1.1 Definitions

Wherever used in the Contract Documents, the following terms shall have the meanings indicated, which shall be applicable to both the singular and plural thereof:

1.1.1 Adverse Weather: Shall be only weather that satisfies all of the following conditions: (1) unusually severe precipitation, sleet, snow, hail, or extreme temperature conditions in excess of the norm for the location and time of year it occurred based on the closest weather station data averaged over the past five years, (2) that is unanticipated and would cause unsafe work conditions and/or is unsuitable for scheduled work that should not be performed during inclement weather (i.e., exterior finishes), and (3) at the Project.

1.1.2 Allowance Expenditure Directive: Written authorization for expenditure of allowance, if any.

1.1.3 Approval, Approved, and/or Accepted: Written authorization, unless stated otherwise.

1.1.4 Architect (or "Design Professional in General Responsible Charge"): The individual, partnership, corporation, joint venture, or any combination thereof, named as Architect, who will have the rights and authority assigned to the Architect in the Contract Documents. The term Architect means the Design Professional in General Responsible Charge as defined in DSA PR 13-02 on this Project or the Architect's authorized representative.

1.1.5 As-Builts: Reproducible blue line prints of drawings to be prepared on a monthly basis pursuant to the Contract Documents, that reflect changes made during the performance of the Work, recording differences between the original design of the Work and the Work as constructed since the preceding monthly submittal. See **Record Drawings**.

1.1.6 Bidder: A contractor who intends to provide a proposal to the District to perform the Work of this Contract.

1.1.7 Burdened: The labor rate for Contractor or any Subcontractor inclusive of any and all burden costs including, but not limited to, health and welfare pay, vacation and holiday pay, pension contributions, training rates, benefits of any kind, insurance of any kind, workers' compensation, liability insurance, truck expenses, supply expenses of any kind, payroll taxes, and any other taxes of any kind.

1.1.8 Change Order: A written order to the Contractor authorizing an addition to, deletion from, or revision in the Work, and/or authorizing an adjustment in the Contract Price or Contract Time.

1.1.9 Claim: A Dispute that remains unresolved at the conclusion of the all the applicable Dispute Resolution requirements provided herein.

1.1.10 Construction Change Directive: A written order prepared and issued by the District, the Construction Manager, and/or the Architect and signed by the District and the Architect, directing a change in the Work.

1.1.11 Construction Manager: The individual, partnership, corporation, joint venture, or any combination thereof, or its authorized representative, named as such by the District. If no Construction Manager is used on the Project that is the subject of this Contract, then all references to Construction Manager herein shall be read to refer to District.

1.1.12 Construction Schedule: The progress schedule of construction of the Project as provided by Contractor and approved by District.

1.1.13 Contract, Contract Documents: The Contract consists exclusively of the documents evidencing the agreement of the District and Contractor, identified as the Contract Documents. The Contract Documents consist of the following documents as applicable:

- 1.1.13.1** Notice to Bidders
- 1.1.13.2** Instructions to Bidders
- 1.1.13.3** Bid Form and Proposal
- 1.1.13.4** Bid Bond
- 1.1.13.5** Designated Subcontractors List
- 1.1.13.6** Site Visit Certification (if a site visit was required)
- 1.1.13.7** Non-Collusion Declaration
- 1.1.13.8** Notice of Award
- 1.1.13.9** Notice to Proceed
- 1.1.13.10** Agreement
- 1.1.13.11** Escrow of Bid Documentation
- 1.1.13.12** Escrow Agreement for Security Deposits in Lieu of Retention (if applicable)
- 1.1.13.13** Performance Bond
- 1.1.13.14** Payment Bond (Contractor's Labor & Material Bond)
- 1.1.13.15** General Conditions
- 1.1.13.16** Special Conditions (if applicable)
- 1.1.13.17** Project Labor Agreement (if applicable)
- 1.1.13.18** Hazardous Materials Procedures and Requirements
- 1.1.13.19** Workers' Compensation Certification
- 1.1.13.20** Prevailing Wage Certification
- 1.1.13.21** Disabled Veteran Business Enterprise Participation Certification (if applicable)
- 1.1.13.22** Drug-Free Workplace Certification (if applicable)
- 1.1.13.23** Tobacco-Free Environment Certification
- 1.1.13.24** Hazardous Materials Certification (if applicable)
- 1.1.13.25** Lead-Based Materials Certification (if applicable)
- 1.1.13.26** Imported Materials Certification (if applicable)
- 1.1.13.27** Criminal Background Investigation/Fingerprinting Certification
- 1.1.13.28** Buy American Certification (if certain federal funds used)
- 1.1.13.29** Roofing Project Certification (if applicable)
- 1.1.13.30** Registered Subcontractors List

- 1.1.13.31** Iran Contracting Act Certification (if applicable)
- 1.1.13.32** COVID-19 Vaccination/Testing Certification
- 1.1.13.33** Federal Debarment Certification (if applicable)
- 1.1.13.34** Federal Byrd Anti-Lobbying Certification (if applicable)
- 1.1.13.35** Post Bid Interview
- 1.1.13.36** All Plans, Technical Specifications, and Drawings
- 1.1.13.37** Any and all addenda to any of the above documents
- 1.1.13.38** Any and all change orders or written modifications to the above documents if approved in writing by the District

1.1.14 Contract Price: The total monies payable to the Contractor under the terms and conditions of the Contract Documents.

1.1.15 Contract Time: The time period stated in the Agreement for the completion of the Work.

1.1.16 Contractor: The person or persons identified in the Agreement as contracting to perform the Work to be done under this Contract, or the legal representative of such a person or persons.

1.1.17 Daily Job Report(s): Daily Project reports prepared by the Contractor's employee(s) who are present on Site, which shall include the information required herein.

1.1.18 Day(s): Unless otherwise designated, day(s) means calendar day(s).

1.1.19 Department of Industrial Relations (or "DIR"): is responsible, among other things, for labor compliance monitoring and enforcement of California prevailing wage laws and regulations for public works contracts.

1.1.20 Design Professional in General Responsible Charge: See definition of **Architect** above.

1.1.21 Dispute: A separate demand by Contractor for a time extension, or payment of money or damages arising from Work done by or on behalf of the Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or Contractor is not otherwise entitled to; or an amount of payment disputed by the District.

1.1.22 District: The public agency or the school district for which the Work is performed. The governing board of the District or its designees will act for the District in all matters pertaining to the Contract. The District may, at any time,

1.1.22.1 Direct the Contractor to communicate with or provide notice to the Construction Manager or the Architect on matters for which the Contract Documents indicate the Contractor will communicate with or provide notice to the District; and/or

1.1.22.2 Direct the Construction Manager or the Architect to communicate with or direct the Contractor on matters for which the Contract Documents indicate the District will communicate with or direct the Contractor.

1.1.23 Drawings (or "Plans"): The graphic and pictorial portions of the Contract Documents showing the design, location, scope and dimensions of the work, generally including plans, elevations, sections, details, schedules, sequence of operation, and diagrams.

1.1.24 DSA: Division of the State Architect.

1.1.25 Force Account Directive: A process that may be used when the District and the Contractor cannot agree on a price for a specific portion of work or before the Contractor prepares a price for a specific portion of work and whereby the Contractor performs the work as indicated herein on a time and materials basis.

1.1.26 Job Cost Reports: Any and all reports or records detailing the costs associated with work performed on or related to the Project that Contractor shall maintain for the Project. Specifically, Job Cost Reports shall contain, but are not limited by or to, the following information: a description of the work performed or to be performed on the Project; quantity, if applicable, of work performed (hours, square feet, cubic yards, pounds, etc.) for the Project; Project budget; costs for the Project to date; estimated costs to complete the Project; and expected costs at completion. The Job Cost Reports shall also reflect all Contract cost codes, change orders, elements of non-conforming work, back charges, and additional services.

1.1.27 Labor Commissioner's Office (or "Labor Commissioner", also known as the Division of Labor Standards Enforcement ("DLSE")): Division of the DIR responsible for adjudicating wage claims, investigating discrimination and public works complaints, and enforcing Labor Code statutes and Industrial Welfare Commission orders.

1.1.28 Municipal Separate Storm Sewer System (or "MS4"): A system of conveyances used to collect and/or convey storm water, including, without limitation, catch basins, curbs, gutters, ditches, man-made channels, and storm drains.

1.1.29 Plans: See **Drawings**.

1.1.30 Premises: The real property owned by the District on which the Site is located.

1.1.31 Product(s): New material, machinery, components, equipment, fixtures and systems forming the Work, including existing materials or components required and approved by the District for reuse.

1.1.32 Product Data: Illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate a material, product, or system for some portion of the Work.

1.1.33 Program Manager: The individual, partnership, corporation, joint venture, or any combination thereof, or its authorized representative, named as such by the District. If no Program Manager is designated for Project that is the subject of this Contract, then all references to Project Manager herein shall be read to refer to District.

1.1.34 Project: The planned undertaking as provided for in the Contract Documents.

1.1.35 Project Inspector (or "Inspector"): The individual(s) retained by the District in accordance with title 24 of the California Code of Regulations to monitor and inspect the Project.

1.1.36 Project Labor Agreement (or "PLA"): a prehire collective bargaining agreement in accordance with Public Contract Code section 2500 et seq. that establishes terms and conditions of employment for a specific construction project or projects and/or is an agreement described in Section 158(f) of Title 29 of the United States Code.

1.1.37 Proposed Change Order (or "PCO"): a written request prepared by the Contractor requesting that the District and the Architect issue a Change Order based upon a proposed change to the Work.

1.1.38 Provide: Shall include "provide complete in place," that is, "furnish and install," and "provide complete and functioning as intended in place" unless specifically stated otherwise.

1.1.39 Qualified SWPPP Practitioners (or "QSP"): certified personnel that attended a State Water Resources Control Board sponsored or approved training class and passed the qualifying exam.

1.1.40 Record Drawings: Reproducible drawings (or Plans) prepared pursuant to the requirements of the Contract Documents that reflect all changes made during the performance of the Work, recording differences between the original design of the Work and the Work as constructed upon completion of the Project. See also **As-Builts**.

1.1.41 Request for Information (or "RFI"): A written request prepared by the Contractor requesting that the Architect provide additional information necessary to clarify or amplify an item in the Contract Documents that the Contractor believes is not clearly shown or called for in the Drawings or Specifications or other portions of the Contract Documents, or to address problems that have arisen under field conditions.

1.1.42 Request for Substitution for Specified Item: A request by Contractor to substitute an equal or superior material, product, thing, or service for a specific material, product, thing, or service that has been designated in the Contract Documents by a specific brand or trade name.

1.1.43 Safety Orders: Written and/or verbal orders for construction issued by the California Division of Occupational Safety and Health ("CalOSHA") or by the United States Occupational Safety and Health Administration ("OSHA").

1.1.44 Safety Plan: Contractor's safety plan specifically adapted for the Project. Contractor's Safety Plan shall comply with all provisions regarding Project safety, including all applicable provisions in these General Conditions.

1.1.45 Samples: Physical examples that illustrate materials, products, equipment, finishes, colors, or workmanship and that, when approved in accordance with the Contract Documents, establish standards by which portions of the Work will be judged.

1.1.46 Shop Drawings: All drawings, prints, diagrams, illustrations, brochures, schedules, and other data that are prepared by the Contractor, a subcontractor, manufacturer, supplier, or distributor, that illustrate how specific portions of the Work shall be fabricated or installed.

1.1.47 Site: The Project site as shown on the Drawings.

1.1.48 Specifications: That portion of the Contract Documents, Division 1 through Division 49, and all technical sections, and addenda to all of these, if any, consisting of written descriptions and requirements of a technical nature of materials, equipment, construction methods and systems, standards, and workmanship.

1.1.49 State: The State of California.

1.1.50 Storm Water Pollution Prevention Plan (or "SWPPP"): A document which identifies sources and activities at a particular facility that may contribute pollutants to storm water and contains specific control measures and time frames to prevent or treat such pollutants.

1.1.51 Subcontractor: A contractor and/or supplier who is under contract with the Contractor or with any other subcontractor, regardless of tier, to perform a portion of the Work of the Project.

1.1.52 Submittal Schedule: The schedule of submittals as provided by Contractor and approved by District.

1.1.53 Surety: The person, firm, or corporation that executes as surety the Contractor's Performance Bond and Payment Bond, and must be a California admitted surety insurer as defined in the Code of Civil Procedure section 995.120.

1.1.54 Work: All labor, materials, equipment, components, appliances, supervision, coordination, and services required by, or reasonably inferred from, the Contract Documents, that are necessary for the construction and completion of the Project.

1.2 Laws Concerning the Contract

Contract is subject to all provisions of the Constitution and laws of California and the United States governing, controlling, or affecting District, or the property, funds, operations, or powers of District, and such provisions are by this reference made a part hereof. Any provision required by law to be included in this Contract shall be deemed to be inserted.

1.3 No Oral Agreements

No oral agreement or conversation with any officer, agent, or employee of District, either before or after execution of Contract, shall affect or modify any of the terms or obligations contained in any of the documents comprising the Contract.

1.4 No Assignment

Contractor shall not assign this Contract or any part thereof including, without limitation, any Work or money to become due hereunder without the prior written consent of the

District. Assignment without District's prior written consent shall be null and void. Any assignment of money due or to become due under this Contract shall be subject to a prior lien for services rendered or material supplied for performance of work called for under this Contract in favor of all persons, firms, or corporations rendering services or supplying material to the extent that claims are filed pursuant to the Civil Code, Code of Civil Procedure, Government Code, Labor Code, and/or Public Contract Code, and shall also be subject to deductions for liquidated damages or withholding of payments as determined by District in accordance with this Contract. Contractor shall not assign or transfer in any manner to a Subcontractor or supplier the right to prosecute or maintain an action against the District.

1.5 Notice and Service Thereof

1.5.1 Any notice from one party to the other or otherwise under Contract shall be in writing and shall be dated and signed by the party giving notice or by a duly authorized representative of that party. Any notice shall not be effective for any purpose whatsoever unless served in one of the following manners:

1.5.1.1 If notice is given by personal delivery thereof, it shall be considered delivered on the day of delivery.

1.5.1.2 If notice is given by overnight delivery service, it shall be considered delivered one (1) day after date deposited, as indicated by the delivery service.

1.5.1.3 If notice is given by depositing same in United States mail, enclosed in a sealed envelope, it shall be considered delivered three (3) days after date deposited, as indicated by the postmarked date.

1.5.1.4 If notice is given by registered or certified mail with postage prepaid, return receipt requested, it shall be considered delivered on the day the notice is signed for.

1.5.1.5 Electronic mail may be used for convenience but is not a substitute for the notice and service requirements herein.

1.6 No Waiver

The failure of District in any one or more instances to insist upon strict performance of any of the terms of this Contract or to exercise any option herein conferred shall not be construed as a waiver or relinquishment to any extent of the right to assert or rely upon any such terms or option on any future occasion. No action or failure to act by the District, Architect, or Construction Manager shall constitute a waiver of any right or duty afforded the District under the Contract, nor shall any action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

1.7 Substitutions for Specified Items

1.7.1 Whenever in the Specifications any materials, process, or article is indicated or specified by grade, patent, or proprietary name, or by name of manufacturer, that Specification shall be deemed to be followed by the words "or equal." Contractor may, unless otherwise stated, offer any material, process, or article that shall be substantially equal or better in every respect to that so indicated or specified.

1.7.1.1 If the material, process, or article offered by Contractor is not, in the opinion of the District, substantially equal or better in every respect to that specified, then Contractor shall furnish the material, process, or article specified in the Specifications without any additional compensation or change order.

1.7.1.2 This provision shall not be applicable with respect to any material, product, thing or service for which District made findings and gave notice in accordance with Public Contract Code section 3400(c); therefore, Contractor shall not be entitled to request a substitution with respect to those materials, products or services.

1.7.2 A request for a substitution shall be submitted as follows:

1.7.2.1 Contractor shall notify the District in writing of any request for a substitution at least ten (10) days prior to bid opening as indicated in the Instructions to Bidders.

1.7.2.2 Requests for Substitutions after award of the Contract shall be submitted within thirty-five (35) days of the date of the Notice of Award.

1.7.3 Within 35 days after the date of the Notice of Award, Contractor shall provide data substantiating a request for substitution of "an equal" item, including but not limited to the following:

1.7.3.1 All variations of the proposed substitute from the material specified including, but not limited to, principles of operation, materials, or construction finish, thickness or gauge of materials, dimensions, weight, and tolerances;

1.7.3.2 Available maintenance, repair or replacement services;

1.7.3.3 Increases or decreases in operating, maintenance, repair, replacement, and spare parts costs;

1.7.3.4 Whether or not acceptance of the substitute will require other changes in the Work (or in work performed by the District or others under Contract with the District); and

1.7.3.5 The time impact on any part of the Work resulting directly or indirectly from acceptance of the proposed substitute.

1.7.4 No substitutions shall be made until approved, in writing, by the District. The burden of proof as to equality of any material, process, or article shall rest with Contractor. The Contractor warrants that if substitutes are approved:

1.7.4.1 The proposed substitute is equal or superior in all respects to that specified, and that such proposed substitute is suitable and fit for the intended purpose and will perform adequately the function and achieve the results called for by the general design and the Contract Documents;

1.7.4.2 The Contractor provides the same warranties and guarantees for the substitute that would be provided for that specified;

1.7.4.3 The Contractor shall be fully responsible for the installation of the substitute and any changes in the Work required, either directly or indirectly, because of the acceptance of such substitute, with no increase in Contract Price or Contract Time.

Incidental changes or extra component parts required to accommodate the substitute will be made by the Contractor without a change in the Contract Price or Contract Time;

1.7.4.4 The Contractor shall be responsible for any re-design costs occasioned by District's acceptance and/or approval of any substitute; and

1.7.4.5 The Contractor shall, in the event that a substitute is less costly than that specified, credit the District with one hundred percent (100%) of the net difference between the substitute and the originally specified material. In this event, the Contractor agrees to execute a deductive Change Order to reflect that credit.

1.7.5 In the event Contractor furnishes a material, process, or article more expensive than that specified, the difference in the cost of that material, process, or article so furnished shall be borne by Contractor.

1.7.6 In no event shall the District be liable for any increase in Contract Price or Contract Time due to any claimed delay in the evaluation of any proposed substitute or in the acceptance or rejection of any proposed substitute.

1.7.7 Contractor shall be responsible for any costs the District incurs for professional services, DSA fees, or delay to the Project Schedule, if applicable, while DSA reviews changes for the convenience of Contractor and/or to accommodate Contractor's means and methods. District may deduct those costs from any amounts owing to the Contractor for the review of the request for substitution, even if the request for substitution is not approved. District, at its sole discretion, shall deduct from the payments due to and/or invoice Contractor for all the professional services and/or DSA fees or delay to the Project Schedule, if applicable, while DSA reviews changes for the convenience of Contractor and/or to accommodate Contractor's means and methods arising herein.

1.8 Materials and Work

1.8.1 Except as otherwise specifically stated in this Contract, Contractor shall provide and pay for all materials, labor, tools, equipment, transportation, supervision, temporary constructions of every nature, and all other services, management, and facilities of every nature whatsoever necessary to execute and complete this Contract, in a good and workmanlike manner, within the Contract Time.

1.8.2 Unless otherwise specified, all materials shall be new and of the best quality of their respective kinds and grades as noted or specified, workmanship shall be of good quality, and Contractor shall use all diligence to inform itself fully as to the required manufacturer's instructions and to comply therewith.

1.8.3 Materials shall be furnished in ample quantities and at such times as to insure uninterrupted progress of Work and shall be stored properly and protected from the elements, theft, vandalism, or other loss or damage as required.

1.8.4 For all materials and equipment specified or indicated in the Drawings, the Contractor shall provide all labor, materials, equipment, and services necessary for complete assemblies and complete working systems, functioning as intended. Incidental items not indicated on Drawings, nor mentioned in the Specifications, that can legitimately and reasonably be inferred to belong to the Work described or be

necessary in good practice to provide a complete assembly or system, shall be furnished as though itemized here in every detail. In all instances, material and equipment shall be installed in strict accordance with each manufacturer's most recent published recommendations and specifications.

1.8.5 Contractor shall, after award of Contract by District and after relevant submittals have been reviewed, place orders for materials and/or equipment as specified so that delivery of same may be made without delays to the Work. Contractor shall, upon five (5) days' demand from District, present documentary evidence showing that orders have been placed.

1.8.6 District reserves the right but has no obligation, in response to Contractor's neglect or failure in complying with the above instructions, to place orders for such materials and/or equipment as the District may deem advisable in order that the Work may be completed at the date specified in the Contract, and all expenses incidental to the procuring of said materials and/or equipment shall be paid for by Contractor or deducted from payment(s) to Contractor.

1.8.7 Contractor warrants good title to all material, supplies, and equipment installed or incorporated in Work and agrees upon completion of all Work to deliver the Site to District, together with all improvements and appurtenances constructed or placed thereon by it, and free from any claims, liens, or charges. Contractor further agrees that neither it nor any person, firm, or corporation furnishing any materials or labor for any work covered by the Contract shall have any right to lien any portion of the Premises or any improvement or appurtenance thereon, except that Contractor may install metering devices or other equipment of utility companies or of political subdivision, title to which is commonly retained by utility company or political subdivision. In the event of installation of any such metering device or equipment, Contractor shall advise District as to owner thereof.

1.8.7.1 If a lien or a claim based on a stop payment notice of any nature should at any time be filed against the Work or any District property, by any entity that has supplied material or services at the request of the Contractor, Contractor and Contractor's Surety shall promptly, on demand by District and at Contractor's and Surety's own expense, take any and all action necessary to cause any such lien or a claim based on a stop payment notice to be released or discharged immediately therefrom.

1.8.7.2 If the Contractor fails to furnish to the District within ten (10) calendar days after demand by the District, satisfactory evidence that a lien or a claim based on a stop payment notice has been so released, discharged, or secured, the District may discharge such indebtedness and deduct the amount required therefor, together with any and all losses, costs, damages, and attorney's fees and expense incurred or suffered by District from any sum payable to Contractor under the Contract.

1.8.8 Nothing contained in this Article, however, shall defeat or impair the rights of persons furnishing materials or labor under any bond given by Contractor for their protection or any rights under any law permitting such protection or any rights under any law permitting such persons to look to funds due Contractor in hands of District (e.g., stop payment notices), and this provision shall be inserted in all subcontracts and material contracts and notice of its provisions shall be given to all persons

furnishing material for work when no formal contract is entered into for such material.

1.8.9 Title to new materials and/or equipment for the Work of this Contract and attendant liability for its protection and safety shall remain with Contractor until incorporated in the Work of this Contract and accepted by District. No part of any materials and/or equipment shall be removed from its place of storage except for immediate installation in the Work of this Contract. Should the District, in its discretion, allow the Contractor to store materials and/or equipment for the Work off-site, Contractor will store said materials and/or equipment at a bonded warehouse and with appropriate insurance coverage at no cost to District. Contractor shall keep an accurate inventory of all materials and/or equipment in a manner satisfactory to District or its authorized representative and shall, at the District's request, forward it to the District.

2. [RESERVED]

3. ARCHITECT

3.1 The Architect shall represent the District during the Project and will observe the progress and quality of the Work on behalf of the District. Architect shall have the authority to act on behalf of District to the extent expressly provided in the Contract Documents and to the extent determined by District. Architect shall have authority to reject materials, workmanship, and/or the Work whenever rejection may be necessary, in Architect's reasonable opinion, to ensure the proper execution of the Contract.

3.2 Architect shall, with the District and on behalf of the District, determine the amount, quality, acceptability, and fitness of all parts of the Work, and interpret the Specifications, Drawings, and shall, with the District, interpret all other Contract Documents.

3.3 Architect shall have all authority and responsibility established by law, including title 24 of the California Code of Regulations.

3.4 Contractor shall provide District and the Construction Manager with a copy of all written communication between Contractor and Architect at the same time as that communication is made to Architect, including, without limitation, all RFIs, correspondence, submittals, claims, and proposed change orders.

4. CONSTRUCTION MANAGER

4.1 If a Construction Manager is used on this Project ("Construction Manager" or "CM"), the Construction Manager will provide administration of the Contract on the District's behalf. After execution of the Contract and Notice to Proceed, all correspondence and/or instructions from Contractor and/or District shall be forwarded through the Construction Manager. The Construction Manager will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences, or procedures or for safety precautions in connection with the Work, which shall all remain the Contractor's responsibility.

4.2 The Construction Manager, however, will have authority to reject materials and/or workmanship not conforming to the Contract Documents, as determined by the District, the Architect, and/or the Project Inspector. The Construction Manager shall also

have the authority to require special inspection or testing of any portion of the Work, whether it has been fabricated, installed, or fully completed. Any decision made by the Construction Manager, in good faith, shall not give rise to any duty or responsibility of the Construction Manager to: the Contractor; any Subcontractor; the Contractor or Subcontractor's respective agents, employees; or other persons performing any of the Work. The Construction Manager shall have free access to any or all parts of Work at any time.

4.3 If the District does not use a Construction Manager on this Project, all references within the Contract Documents to Construction Manager or CM shall be read as District.

5. INSPECTOR, INSPECTIONS, AND TESTS

5.1 Project Inspector

5.1.1 One or more Project Inspector(s), including special Project Inspector(s), as required, will be assigned to the Work by District, in accordance with requirements of title 24, part 1, of the California Code of Regulations, to enforce the building code and monitor compliance with Plans and Specifications for the Project previously approved by the DSA. Duties of Project Inspector(s) are specifically defined in section 4-342 of said part 1 of title 24.

5.1.2 No Work shall be carried on except with the knowledge and under the inspection of the Project Inspector(s). The Project Inspector(s) shall have free access to any or all parts of Work at any time. Contractor shall furnish Project Inspector(s) reasonable opportunities for obtaining such information as may be necessary to keep Project Inspector(s) fully informed respecting progress and manner of work and character of materials, including, but not limited to, submission of form DSA 156 (or the most current version applicable at the time the Work is performed) to the Project Inspector at least 48 hours in advance of the commencement and completion of construction of each and every aspect of the Work. Forms are available on the DSA's website at: <http://www.dgs.ca.gov/dsa/Forms.aspx>. Inspection of Work shall not relieve Contractor from an obligation to fulfill this Contract. Project Inspector(s) and the DSA are authorized to suspend work whenever the Contractor and/or its Subcontractor(s) are not complying with the Contract Documents. Any work stoppage by the Project Inspector(s) and/or DSA shall be without liability to the District. Contractor shall instruct its Subcontractors and employees accordingly.

5.1.3 If Contractor and/or any Subcontractor requests that the Project Inspector(s) perform any inspection off-site, this shall only be done if it is allowable pursuant to applicable regulations and DSA approval, if the Project Inspector(s) agree to do so, and at the expense of the Contractor.

5.2 Tests and Inspections

5.2.1 Tests and Inspections shall comply with title 24, part 1, California Code of Regulations, group 1, article 5, section 4-335, and with the provisions of the Specifications.

5.2.2 The District will select an independent testing laboratory to conduct the tests. Selection of the materials required to be tested shall be by the laboratory or

the District's representative and not by the Contractor. The Contractor shall notify the District's representative a sufficient time in advance of its readiness for required observation or inspection.

5.2.3 The Contractor shall notify the District's representative a sufficient time in advance of the manufacture of material to be supplied under the Contract Documents, which must by terms of the Contract Documents be tested, in order that the District may arrange for the testing of same at the source of supply. This notice shall be provided, at a minimum, seventy-two (72) hours prior to the manufacture of the material that needs to be tested.

5.2.4 Any material shipped by the Contractor from the source of supply prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from said representative that such testing and inspection will not be required, shall not be incorporated into and/or onto the Project.

5.2.5 The District will select the testing laboratory and pay for the cost of all tests and inspections, excepting those inspections performed at Contractor's request and expense. Contractor shall reimburse the District for any and all laboratory costs or other testing costs for any materials found to be not in compliance with the Contract Documents. At the District's discretion, District may elect to deduct laboratory or other testing costs for noncompliant materials from the Contract Price, and such deduction shall not constitute a withholding.

5.3 Costs for After Hours and/or Off Site Inspections

If the Contractor performs Work outside the Inspector's regular working hours or requests the Inspector to perform inspections off Site, costs of any inspections required outside regular working hours or off Site shall be borne by the Contractor and may be invoiced to the Contractor by the District or the District may deduct those expenses from the next Progress Payment.

6. CONTRACTOR

Contractor shall construct and complete, in a good and workmanlike manner, the Work for the Contract Price including any adjustment(s) to the Contract Price pursuant to provisions herein regarding changes to the Contract Price. Except as otherwise noted, Contractor shall provide and pay for all labor, materials, equipment, permits (excluding DSA), fees, licenses, facilities, transportation, taxes, bonds and insurance, and services necessary for the proper execution and completion of the Work, except as indicated herein.

6.1 Status of Contractor

6.1.1 Contractor is and shall at all times be deemed to be an independent contractor and shall be wholly responsible for the manner in which it and its Subcontractors perform the services required of it by the Contract Documents. Nothing herein contained shall be construed as creating the relationship of employer and employee, or principal and agent, between the District, or any of the District's employees or agents, and Contractor or any of Contractor's Subcontractors, agents or employees. Contractor assumes exclusively the responsibility for the acts of its agents, and employees as they relate to the services to be provided during the course and scope of their employment. Contractor, its Subcontractors, agents, and its employees shall not be entitled to any rights or privileges of District employees.

District shall be permitted to monitor the Contractor's activities to determine compliance with the terms of this Contract.

6.1.2 As required by law, Contractor and all Subcontractors shall be properly licensed and regulated by the Contractors State License Board, 9821 Business Park Drive, Sacramento, California 95827, <http://www.cslb.ca.gov>.

6.1.3 As required by law, Contractor and all Subcontractors shall be properly registered as public works contractors by the Department of Industrial Relations at: <https://efiling.dir.ca.gov/PWCR/ActionServlet?action=displayPWCRRegistrationForm> or current URL.

6.1.4 Contractor represents that Contractor and all Subcontractors shall not be presently debarred, suspended, proposed for disbarment, declared ineligible or excluded pursuant to either Labor Code section 1777.1 or Labor Code section 1777.7.

6.1.5 Contractor represents that it has no existing interest and will not acquire any interest, direct or indirect, which could conflict in any manner or degree with the performance of Work required under this Contract and that no person having any such interest shall be employed by Contractor.

6.1.6 If Contractor intends to make any change in the name or legal nature of the Contractor's entity, Contractor must first notify the District in writing prior to making any contemplated change. The District shall determine in writing if Contractor's intended change is permissible while performing this Contract.

6.2 Project Inspection Card(s)

Contractor shall verify that forms DSA 152 (or the current version applicable at the time the Work is performed) are issued for the Project prior to the commencement of construction.

6.3 Contractor's Supervision

6.3.1 During progress of the Work, Contractor shall keep on the Premises, and at all other locations where any Work related to the Contract is being performed, an experienced and competent project manager and construction superintendent who are employees of the Contractor, to whom the District does not object and at least one of whom shall be fluent in English, written and verbal.

6.3.2 The project manager and construction superintendent shall both speak fluently the predominant language of the Contractor's employees.

6.3.3 Before commencing the Work herein, Contractor shall give written notice to District of the name of its project manager and construction superintendent. Neither the Contractor's project manager nor construction superintendent shall be changed except with prior written notice to District. If the Contractor's project manager and/or construction superintendent proves to be unsatisfactory to Contractor, or to District, any of the District's employees, agents, the Construction Manager, or the Architect, the unsatisfactory project manager and/or construction superintendent shall be replaced. However, Contractor shall notify District in writing

before any change occurs, but no less than two (2) business days prior. Any replacement of the project manager and/or construction superintendent shall be made promptly and must be satisfactory to the District. The Contractor's project manager and construction superintendent shall each represent Contractor, and all directions given to Contractor's project manager and/or construction superintendent shall be as binding as if given to Contractor.

6.3.4 Contractor shall give efficient supervision to Work, using its best skill and attention. Contractor shall carefully study and compare all Contract Documents, Drawings, Specifications, and other instructions and shall at once report to District, Construction Manager, and Architect any error, inconsistency, or omission that Contractor or its employees and Subcontractors may discover, in writing, with a copy to District's Project Inspector(s). The Contractor shall have responsibility for discovery of errors, inconsistencies, or omissions.

6.4 Duty to Provide Fit Workers

6.4.1 Contractor and Subcontractor(s) shall at all times enforce strict discipline and good order among their employees and shall not employ or work any unfit person or anyone not skilled in work assigned to that person. It shall be the responsibility of Contractor to ensure compliance with this requirement. District may require Contractor to permanently remove unfit persons from Project Site.

6.4.2 Any person in the employ of Contractor or Subcontractor(s) whom District may deem incompetent or unfit shall be excluded from working on the Project and shall not again be employed on the Project except with the prior written consent of District.

6.4.3 The Contractor shall furnish labor that can work in harmony with all other elements of labor employed or to be employed in the Work.

6.4.4 Fingerprinting

Contractor shall comply with the provisions of Education Code section 45125.2 regarding the submission of employee fingerprints to the California Department of Justice and the completion of criminal background investigations of its employees, its subcontractor(s), and its subcontractors' employees. Contractor shall not permit any employee to have any contact with District pupils until such time as Contractor has verified in writing to the governing board of the District, (A) that such employee has not been convicted of a violent or serious felony, as defined in Education Code section 45122.1 and/or (B) that the prohibition does not apply to an employee as provided by Education Code section 45125.1(e)(2) or (3). Contractor shall fully complete and perform all tasks required pursuant to the Criminal Background Investigation/ Fingerprinting Certification.

6.5 Field Office

6.5.1 Contractor shall provide a temporary office on the Site for the District's use exclusively, during the term of the Contract.

6.6 Purchase of Materials and Equipment

The Contractor is required to order, obtain, and store materials and equipment sufficiently in advance of its Work at no additional cost or advance payment from District to assure that there will be no delays.

6.7 Documents on Work

6.7.1 Contractor shall at all times keep on the Site, or at another location as the District may authorize in writing, one legible copy of all Contract Documents, including Addenda and Change Orders, and Titles 19 and 24 of the California Code of Regulations, the specified edition(s) of the Uniform Building Code, all approved Drawings, Plans, Schedules, and Specifications, and all codes and documents referred to in the Specifications, and made part thereof. These documents shall be kept in good order and available to District, Construction Manager, Architect, Architect's representatives, the Project Inspector(s), and all authorities having jurisdiction. Contractor shall be acquainted with and comply with the provisions of these titles as they relate to this Project. (See particularly the duties of Contractor, Title 24, Part 1, California Code of Regulations, section 4-343.) Contractor shall also be acquainted with and comply with all California Code of Regulations provisions relating to conditions on this Project, particularly Titles 8 and 17. Contractor shall coordinate with Architect and Construction Manager and shall submit its verified report(s) according to the requirements of Title 24.

6.7.2 Daily Job Reports.

6.7.2.1 Contractor shall maintain, at a minimum, at least one (1) set of Daily Job Reports on the Project. These must be prepared by the Contractor's employee(s) who are present on Site, and must include, at a minimum, the following information:

- 6.7.2.1.1 A brief description of all Work performed on that day.
- 6.7.2.1.2 A summary of all other pertinent events and/or occurrences on that day.
- 6.7.2.1.3 The weather conditions on that day.
- 6.7.2.1.4 A list of all Subcontractor(s) working on that day, including DIR registration numbers.
- 6.7.2.1.5 A list of each Contractor employee working on that day and the total hours worked for each employee.
- 6.7.2.1.6 A complete list of all equipment on Site that day, whether in use or not.
- 6.7.2.1.7 A complete list of all materials, supplies, and equipment delivered on that day.
- 6.7.2.1.8 A complete list of all inspections and tests performed on that day.

6.7.2.2 Each day Contractor shall provide a copy of the previous day's Daily Job Report to the District or the Construction Manager.

6.8 Preservation of Records

Contractor shall maintain, and District shall have the right to inspect, Contractor's financial records for the Project, including, without limitation, Job Cost Reports for

the Project in compliance with the criteria set forth herein. The District shall have the right to examine and audit all Daily Job Reports or other Project records of Contractor's project manager(s), project superintendent(s), and/or project foreperson(s), all certified payroll records and/or related documents including, without limitation, Job Cost Reports, payroll, payment, timekeeping and tracking documents; all books, estimates, records, contracts, documents, bid documents, bid cost data, subcontract job cost reports, and other data of the Contractor, any Subcontractor, and/or supplier, including computations and projections related to bidding, negotiating, pricing, or performing the Work or Contract modification, in order to evaluate the accuracy, completeness, and currency of the cost, manpower, coordination, supervision, or pricing data at no additional cost to the District. These documents may be duplicative and/or be in addition to any Bid Documents held in escrow by the District. The Contractor shall make available at its office at all reasonable times the materials described in this paragraph for the examination, audit, or reproduction until three (3) years after final payment under this Contract. Notwithstanding the provisions above, Contractor shall provide any records requested by any governmental agency, if available, after the time set forth above.

6.9 Integration of Work

6.9.1 Contractor shall do all cutting, fitting, patching, and preparation of Work as required to make its several parts come together properly, to fit it to receive or be received by work of other contractors, and to coordinate tolerances to various pieces of work, showing upon, or reasonably implied by, the Drawings and Specifications for the completed structure, and shall conform them as District and/or Architect may direct.

6.9.2 Contractor shall make its own layout of lines and elevations and shall be responsible for the accuracy of both Contractor's and Subcontractors' work resulting therefrom.

6.9.3 Contractor and all Subcontractors shall take all field dimensions required in performance of the Work, and shall verify all dimensions and conditions on the Site. All dimensions affecting proper fabrication and installation of all Work must be verified prior to fabrication by taking field measurements of the true conditions. If there are any discrepancies between dimensions in drawings and existing conditions which will affect the Work, Contractor shall bring such discrepancies to the attention of the District and Architect for adjustment before proceeding with the Work. In doing so, it is recognized that Contractor is not acting in the capacity of a licensed design professional, and that Contractor's examination is made in good faith to facilitate construction and does not create an affirmative responsibility of a design professional to detect errors, omissions or inconsistencies in the Contract Documents or to ascertain compliance with applicable laws, building codes or regulations. However, nothing in this provision shall abrogate Contractor's responsibilities for discovering and reporting any error, inconsistency, or omission pursuant to the Contract within the Contractor's standard of care including, without limitation, any applicable laws, ordinance, rules, or regulations. Following receipt of written notice from Contractor, the District and/or Architect shall inform Contractor what action, if any, Contractor shall take with regard to such discrepancies.

6.9.4 All costs caused by noncompliant, defective, or delayed Work shall be borne by Contractor, inclusive of repair work. Schedule delays resulting from unauthorized work shall be Contractor's responsibility.

6.9.5 Contractor shall not endanger any work performed by it or anyone else by cutting, excavating, or otherwise altering work and shall not cut or alter work of any other contractor except with consent of District.

6.10 Notifications

6.10.1 Contractor shall notify the Architect and Project Inspector, in writing, of the commencement of construction of each and every aspect of the Work at least 48 hours in advance by submitting form DSA 156 (or the most current version applicable at the time the Work is performed) to the Project Inspector. Forms are available on the DSA's website at: <http://www.dgs.ca.gov/dsa/Forms.aspx>.

6.10.2 Contractor shall notify the Architect and Project Inspector, in writing, of the completion of construction of each and every aspect of the Work at least 48 hours in advance by submitting form DSA 156 (or current version) to the Project Inspector.

6.11 Obtaining of Permits, Licenses and Registrations

6.11.1 Contractor shall secure and pay for all permits (except DSA), licenses, registrations, approvals and certificates necessary for prosecution of Work, including but not limited to those listed in the Special Conditions, if any, before the date of the commencement of the Work or before the permits, licenses, registrations, approvals and certificates are legally required to continue the Work without interruption. The Contractor shall obtain and pay, only when legally required, for all licenses, registrations, approvals, permits, inspections, and inspection certificates required to be obtained from or issued by any authority having jurisdiction over any part of the Work included in the Contract. All final permits, licenses, registrations, approvals and certificates shall be delivered to District before demand is made for final payment.

6.11.2 General Permit For Storm Water Discharges Associated With Construction and Land Disturbance Activities.

6.11.2.1 Contractor acknowledges that all California school districts are obligated to develop and implement the following requirements for the discharge of storm water to surface waters from its construction and land disturbance activities pursuant to the Clean Water Act and Porter Cologne Water Quality Act. District has determined that the construction of this Project requires enrollment in the Construction Storm Water Permit. District has filed certain submittals referred to as Permit Registration Documents ("PRDS") with the Regional Water Control Board ("Storm Water Pollution Prevention Plan" or "SWPPP").

6.11.2.2 Contractor shall comply with any District SWPPP that is approved by the District and applicable to the Project, at no additional cost to the District. Contractor shall pay any fees and any penalties that may imposed by a regulatory agency for its non-compliance with the SWPPP during the course of Work.

6.11.2.3 Contractor shall provide a Qualified Storm Water Practitioner ("QSP") at no additional cost to the District, who shall be onsite and implement and monitor any and all SWPPP requirements applicable to the Project, including but not limited to:

6.11.2.3.1 All required visual observations, sampling, analysis, reporting and record keeping, including any Numeric Action Levels ("NALs"), if applicable;

6.11.2.3.2 Rain Event Action Plan ("REAP") at least forty eight (48) hours prior to any forecasted rain event requiring implementation of the REAP, including any erosion and sediment control measures needed to protect all exposed portions of the site, if applicable;

6.11.2.3.3 Active Treatment System ("ATS"), if applicable; and

6.11.2.3.4 Best management practices ("BMPs").

6.12 Royalties and Patents

6.12.1 Contractor shall obtain and pay, only when legally required, all royalties and license fees necessary for prosecution of Work before the earlier of the date of the commencement of the Work or the date that the license is legally required to continue the Work without interruption. Contractor shall defend suits or claims of infringement of patent, copyright, or other rights and shall hold the District, the Architect, and the Construction Manager harmless and indemnify them from loss on account thereof except when a particular design, process, or make or model of product is required by the Contract Documents. However, if the Contractor has reason to believe that the required design, process, or product is an infringement of a patent or copyright, the Contractor shall indemnify and defend the District, Architect and Construction Manager against any loss or damage unless the Contractor promptly informs the District of its information.

6.12.2 The review by the District or Architect of any method of construction, invention, appliance, process, article, device, or material of any kind shall be only its adequacy for the Work and shall not approve use by the Contractor in violation of any patent or other rights of any person or entity.

6.13 Work to Comply with Applicable Laws and Regulations

6.13.1 Contractor shall give all notices and comply with the following specific laws, ordinances, rules, and regulations and all other applicable laws, ordinances, rules, and regulations bearing on conduct of Work as indicated and specified, including but not limited to the appropriate statutes and administrative code sections. If Contractor observes that Drawings and Specifications are at variance therewith, or should Contractor become aware of the development of conditions not covered by Contract Documents that may result in finished Work being at variance therewith, Contractor shall promptly notify District in writing and any changes deemed necessary by District shall be made as provided in Contract for changes in Work.

6.13.1.1 National Electrical Safety Code, U. S. Department of Commerce

6.13.1.2 National Board of Fire Underwriters' Regulations

6.13.1.3 International Building Code, latest addition, and the California Code of Regulations, title 24, and other amendments

6.13.1.4 Manual of Accident Prevention in Construction, latest edition, published by A.G.C. of America

6.13.1.5 Industrial Accident Commission's Safety Orders, State of California

6.13.1.6 Regulations of the State Fire Marshall (title 19, California Code of Regulations) and Pertinent Local Fire Safety Codes

6.13.1.7 Americans with Disabilities Act

6.13.1.8 Education Code of the State of California

6.13.1.9 Government Code of the State of California

6.13.1.10 Labor Code of the State of California, division 2, part 7, Public Works and Public Agencies

6.13.1.11 Public Contract Code of the State of California

6.13.1.12 California Art Preservation Act

6.13.1.13 U. S. Copyright Act

6.13.1.14 U. S. Visual Artists Rights Act

6.13.2 Contractor shall comply with all applicable mitigation measures, if any, adopted by any public agency with respect to this Project pursuant to the California Environmental Quality Act (Public Resources Code section 21000 et seq.).

6.13.3 If Contractor performs any Work that it knew, or through exercise of reasonable care should have known, to be contrary to any applicable laws, ordinance, rules, or regulations, Contractor shall bear all costs arising therefrom and arising from the correction of said Work.

6.13.4 Where Specifications or Drawings state that materials, processes, or procedures must be approved by the DSA, State Fire Marshall, or other body or agency, Contractor shall be responsible for satisfying requirements of such bodies or agencies applicable at the time the Work is performed, and as determined by those bodies or agencies.

6.14 Safety/Protection of Persons and Property

6.14.1 The Contractor will be solely and completely responsible for conditions of the Site, including safety of all persons and property during performance of the Work. This requirement will apply continuously and not be limited to normal working hours.

6.14.2 The wearing of hard hats will be mandatory at all times for all personnel on Site. Contractor shall supply sufficient hard hats to properly equip all employees and visitors.

6.14.3 Any construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures in, on, or near the Site.

6.14.4 Implementation and maintenance of safety programs shall be the sole responsibility of the Contractor.

6.14.5 The Contractor shall furnish to the District a copy of the Contractor's safety plan within the time frame indicated in the Contract Documents and specifically adapted for the Project.

6.14.6 Contractor shall be responsible for all damages to persons or property that occur as a result of its fault or negligence in connection with the prosecution of this Contract and shall take all necessary measures and be responsible for the proper care and completion and final acceptance by District. All Work shall be solely at Contractor's risk with the exception of damage to the Work caused by "acts of God" as defined in Public Contract Code section 7105.

6.14.7 Contractor shall take, and require Subcontractors to take, all necessary precautions for safety of workers on the Project and shall comply with all applicable federal, state, local, and other safety laws, standards, orders, rules, regulations, and building codes to prevent accidents or injury to persons on, about, or adjacent to premises where Work is being performed and to provide a safe and healthful place of employment. Contractor shall furnish, erect, and properly maintain at all times, all necessary safety devices, safeguards, construction canopies, signs, nets, barriers, lights, and watchmen for protection of workers and the public and shall post danger signs warning against hazards created by such features in the course of construction.

6.14.8 Hazards Control – Contractor shall store volatile wastes in covered metal containers and remove them from the Site daily. Contractor shall prevent accumulation of wastes that create hazardous conditions. Contractor shall provide adequate ventilation during use of volatile or noxious substances.

6.14.9 Contractor shall designate a responsible member of its organization on the Project, whose duty shall be to post information regarding protection and obligations of workers and other notices required under occupational safety and health laws, to comply with reporting and other occupational safety requirements, and to protect the life, safety, and health of workers. Name and position of person so designated shall be reported to District by Contractor.

6.14.10 Contractor shall correct any violations of safety laws, rules, orders, standards, or regulations. Upon the issuance of a citation or notice of violation by the Division of Occupational Safety and Health, Contractor shall correct such violation promptly.

6.14.11 Contractor shall comply with any District storm water requirements that are approved by the District and applicable to the Project, at no additional cost to the District.

6.14.12 In an emergency affecting safety of life or of work or of adjoining property, Contractor, without special instruction or authorization, shall act, at its discretion, to prevent such threatened loss or injury. Any compensation claimed by Contractor on account of emergency work shall be determined by agreement.

6.14.13 All salvage materials will become the property of the Contractor and shall be removed from the Site unless otherwise called for in the Contract Documents. However, the District reserves the right to designate certain items of value that shall be turned over to the District unless otherwise directed by District.

6.14.14 All connections to public utilities and/or existing on-site services, including, without limitation, internet, phone and data connections, shall be made and maintained in such a manner as to not interfere with the continuing use of same by the District during the entire progress of the Work.

6.14.15 Contractor shall provide such heat, covering, and enclosures as are necessary to protect all Work, materials, equipment, appliances, and tools against damage by weather conditions, such as extreme heat, cold, rain, snow, dry winds, flooding, or dampness.

6.14.16 The Contractor shall protect and preserve the Work from all damage or accident, providing any temporary roofs, window and door coverings, boxings, or other construction as required by the Architect. The Contractor shall be responsible for existing structures, walks, roads, trees, landscaping, and/or improvements in working areas; and shall provide adequate protection therefore. If temporary removal is necessary of any of the above items, or damage occurs due to the Work, the Contractor shall replace same at his expense with same kind, quality, and size of Work or item damaged. This shall include any adjoining property of the District and others.

6.14.17 Contractor shall take adequate precautions to protect existing roads, sidewalks, curbs, pavements, utilities, adjoining property, and structures (including, without limitation, protection from settlement or loss of lateral support), and to avoid damage thereto, and repair any damage thereto caused by construction operations.

6.14.18 Contractor shall confine apparatus, the storage of materials, and the operations of workers to limits indicated by law, ordinances, permits, or directions of Architect, and shall not interfere with the Work or unreasonably encumber Premises or overload any structure with materials. Contractor shall enforce all instructions of District and Architect regarding signs, advertising, fires, and smoking, and require that all workers comply with all regulations while on Project Site.

6.14.19 Contractor, Contractor's employees, Subcontractors, Subcontractors' employees, or any person associated with the Work shall conduct themselves in a manner appropriate for a school site. No verbal or physical contact with neighbors, students, and faculty, profanity, or inappropriate attire and/or logos, or behavior will be permitted. District may require Contractor to temporarily or permanently remove non-complying persons from Project Site.

6.14.20 Contractor shall take care to prevent disturbing or covering any survey markers, monuments, or other devices marking property boundaries or corners. If such markers are disturbed, Contractor shall have a civil engineer, registered as a professional engineer in California, replace them at no cost to District.

6.14.21 In the event that the Contractor enters into any agreement with owners of any adjacent property to enter upon the adjacent property for the purpose of performing the Work, Contractor shall fully indemnify, defend, and hold harmless each person, entity, firm, or agency that owns or has any interest in adjacent

property. The form and content of the agreement of indemnification shall be approved by the District prior to the commencement of any Work on or about the adjacent property. The Contractor shall also indemnify the District as provided in the indemnification provision herein. These provisions shall be in addition to any other requirements of the owners of the adjacent property.

6.15 Working Evenings and Weekends

Contractor may be required to work increased hours, evenings, and/or weekends at no additional cost to the District. Contractor shall give the District seventy-two (72) hours' notice prior to performing any evening and/or weekend work. Contractor shall perform all evening and/or weekend work only upon District's approval and in compliance with all applicable rules, regulations, laws, and local ordinances including, without limitation, all noise and light limitations. Contractor shall reimburse the District for any increased or additional Inspector charges as a result of Contractor's increased hours, or evening and/or weekend work.

6.16 Cleaning Up

6.16.1 The Contractor shall provide all services, labor, materials, and equipment necessary for protecting and securing the Work, all school occupants, furnishings, equipment, and building structure from damage until its completion and final acceptance by District. Dust barriers shall be provided to isolate dust and dirt from construction operations. At completion of the Work and portions thereof, Contractor shall clean to the original state any areas beyond the Work area that become dust laden as a result of the Work. The Contractor must erect the necessary warning signs and barricades to ensure the safety of all school occupants. The Contractor at all times must maintain good housekeeping practices to reduce the risk of fire damage and must make a fire extinguisher, fire blanket, and/or fire watch, as applicable, available at each location where cutting, braising, soldering, and/or welding is being performed or where there is an increased risk of fire.

6.16.2 Contractor at all times shall keep Premises, including property immediately adjacent thereto, free from debris such as waste, rubbish (including personal rubbish of workers, e.g., food wrappers, etc.), and excess materials and equipment caused by the Work. Contractor shall not leave debris under, in, or about the Premises (or surrounding property or neighborhood), but shall promptly remove same from the Premises on a daily basis. If Contractor fails to clean up, District may do so and the cost thereof shall be charged to Contractor. If Contract is for work on an existing facility, Contractor shall also perform specific clean-up on or about the Premises upon request by the District as it deems necessary for continued operations. Contractor shall comply with all related provisions of the Specifications.

6.16.3 If the Construction Manager, Architect, or District observes the accumulation of trash and debris, the District will give the Contractor a 24-hour written notice to mitigate the condition.

6.16.4 Should the Contractor fail to perform the required clean-up, or should the clean-up be deemed unsatisfactory by the District, the District may, at its sole discretion, then perform the clean-up. All cost associated with the clean-up work (including all travel, payroll burden, and costs for supervision) will be deducted from the Contract Price.

6.17 No Relief from Obligations Based on Review by Other Persons

6.17.1 Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents by act or omission of the District, Architect, Construction Manager, Project Inspector, or DSA or other entities having jurisdiction including, but not limited to, administration of the Contract, review of submittals, or by tests, observation, inspection, or permit/interconnection approvals.

7. SUBCONTRACTORS

7.1 Contractor shall provide the District with information for all Subcontracts as indicated in the Contractor's Submittals and Schedules Section herein.

7.2 No contractual relationship exists between the District and any Subcontractor, supplier, or sub-subcontractor by reason of this Contract.

7.3 Contractor agrees to bind every Subcontractor by terms of this Contract as far as those terms that are applicable to Subcontractor's work including, without limitation, all labor, wage & hour, apprentice and related provisions and requirements. If Contractor shall subcontract any part of this Contract, Contractor shall be as fully responsible to District for acts and omissions of any Subcontractor and of persons either directly or indirectly employed by any Subcontractor, including Subcontractor caused Project delays, as it is for acts and omissions of persons directly employed by Contractor. The divisions or sections of the Specifications and/or the arrangement of the drawings are not intended to control the Contractor in dividing the Work among Subcontractors or limit the work performed by any trade.

7.4 District's consent to, or approval of, or failure to object to, any Subcontractor under this Contract shall not in any way relieve Contractor of any obligations under this Contract and no such consent shall be deemed to waive any provisions of this Contract.

7.5 Contractor is directed to familiarize itself with sections 4100 through 4114 of the Public Contract Code of the State of California, as regards subletting and subcontracting, and to comply with all applicable requirements therein. In addition, Contractor is directed to familiarize itself with sections 1720 through 1861 of the Labor Code of the State of California, as regards the payment of prevailing wages and related issues, and to comply with all applicable requirements therein including, without limitation, section 1775 and the Contractor's and Subcontractors' obligations and liability for violations of prevailing wage law and other applicable laws.

7.6 No Contractor whose Bid is accepted shall, without consent of the awarding authority and in full compliance with section 4100 et seq. of the Public Contract Code, including, without limitation, sections 4107, 4107.5, and 4109 of the Public Contract Code, and section 1771.1 of the Labor Code, either:

7.6.1 Substitute any person as a Subcontractor in place of the Subcontractor designated in the original Bid; or

7.6.2 Permit any Subcontract to be assigned or transferred, or allow any portion of the Work to be performed by anyone other than the original Subcontractor listed in the Bid; or

7.6.3 Sublet or subcontract any portion of the Work in excess of one-half of one percent (0.5%) of the Contractor's total bid as to which his original bid did not designate a Subcontractor.

7.7 The Contractor shall be responsible for the coordination of the trades, Subcontractors, sub-subcontractors, and material or equipment suppliers working on the Project.

7.7.1 If the Contract is valued at \$1 million or more and uses, or plans to use, state bond funds, then Contractor is responsible for ensuring that first tier Subcontractors holding C-4, C-7, C-10, C-16, C-20, C-34, C-36, C-38, C-42, C-43, and/or C-46 licenses are prequalified by the District to work on the Project pursuant to Public Contract Code section 20111.6.

7.7.2 Contractor is responsible for ensuring that all Subcontractors are properly registered as public works contractors by the Department of Industrial Relations.

7.8 Contractor is solely responsible for settling any differences between the Contractor and its Subcontractor(s) or between Subcontractors.

7.9 Contractor must include in all of its subcontracts the assignment provisions as indicated in the Termination section of these General Conditions.

8. OTHER CONTRACTS/CONTRACTORS

8.1 District reserves the right to let other contracts, and/or to perform work with its own forces, in connection with the Project. Contractor shall afford other contractors reasonable opportunity for introduction and storage of their materials and execution of their work and shall properly coordinate and connect Contractor's Work with the work of other contractors.

8.2 In addition to Contractor's obligation to protect its own Work, Contractor shall protect the work of any other contractor that Contractor encounters while working on the Project.

8.3 If any part of Contractor's Work depends for proper execution or results upon work of District or any other contractor, the Contractor shall inspect and, before proceeding with its Work, promptly report to the District in writing any defects in District's or any other contractor's work that render Contractor's Work unsuitable for proper execution and results. Contractor shall be held accountable for damages to District for District's or any other contractor's work that Contractor failed to inspect or should have inspected. Contractor's failure to inspect and report shall constitute Contractor's acceptance of all District's or any other contractor's work as fit and proper for reception of Contractor's Work, except as to defects that may develop in District's or any other contractor's work after execution of Contractor's Work and not caused by execution of Contractor's Work.

8.4 To ensure proper execution of its subsequent work, Contractor shall measure and inspect work already in place and shall at once report to the District in writing any discrepancy between that executed work and the Contract Documents.

8.5 Contractor shall ascertain to its own satisfaction the scope of the Project and nature of District's or any other contracts that have been or may be awarded by District

in prosecution of the Project to the end that Contractor may perform this Contract in light of the other contracts, if any.

8.6 Nothing herein contained shall be interpreted as granting to Contractor exclusive occupancy of the Site, the Premises, or of the Project. Contractor shall not cause any unnecessary hindrance or delay to the use and/or operation(s) of the Premises and/or to District or any other contractor working on the Project. If simultaneous execution of any contract or Premises operation is likely to cause interference with performance of Contractor's Contract, Contractor shall coordinate with those contractor(s), person(s), and/or entity(s) and shall notify the District of the resolution.

9. DRAWINGS AND SPECIFICATIONS

9.1 A complete list of all Drawings that form a part of the Contract is to be found as an index on the Drawings themselves, and/or may be provided to the Contractor and/or in the Table of Contents.

9.2 Materials or Work described in words that so applied have a well-known technical or trade meaning shall be deemed to refer to recognized standards, unless noted otherwise.

9.3 Trade Name or Trade Term. It is not the intention of this Contract to go into detailed descriptions of any materials and/or methods commonly known to the trade under "trade name" or "trade term." The mere mention or notation of "trade name" or "trade term" shall be considered a sufficient notice to Contractor that it will be required to complete the work so named, complete, finished, and operable, with all its appurtenances, according to the best practices of the trade.

9.4 The naming of any material and/or equipment shall mean furnishing and installing of same, including all incidental and accessory items thereto and/or labor therefor, as per best practices of the trade(s) involved, unless specifically noted otherwise.

9.5 Contract Documents are complementary, and what is called for by one shall be binding as if called for by all. As such, Drawings and Specifications are intended to be fully cooperative and to agree. However, if Contractor observes that Drawings and Specifications are in conflict with the Contract Documents, Contractor shall promptly notify District and Architect in writing, and any necessary changes shall be made as provided in the Contract Documents.

9.6 In the case of discrepancy or ambiguity in the Contract Documents, the order of precedence in the Agreement shall prevail. However, in the case of discrepancy or ambiguity solely between and among the Drawings and Specifications, the discrepancy or ambiguity shall be resolved in favor of the interpretation that will provide District with the functionally complete and operable Project described in the Drawings and Specifications. In case of ambiguity, conflict, or lack of information, District will furnish clarifications with reasonable promptness.

9.7 Drawings and Specifications are intended to comply with all laws, ordinances, rules, and regulations of constituted authorities having jurisdiction, and where referred to in the Contract Documents, the laws, ordinances, rules, and regulations shall be considered as a part of the Contract within the limits specified. Contractor shall bear all

expense of correcting work done contrary to said laws, ordinances, rules, and regulations.

9.8 As required by Section 4-317(c), Part 1, Title 24, CCR: "Should any existing conditions such as deterioration or non-complying construction be discovered which is not covered by the DSA-approved documents wherein the finished work will not comply with Title 24, California Code of Regulations, a construction change document, or a separate set of plans and specifications, detailing and specifying the required repair work shall be submitted to and approved by DSA before proceeding with the repair work."

9.9 Ownership of Drawings

All copies of Plans, Drawings, Designs, Specifications, and copies of other incidental architectural and engineering work, or copies of other Contract Documents furnished by District, are the property of District. They are not to be used by Contractor in other work and, with the exception of signed sets of Contract Documents, are to be returned to District on request at completion of Work, or may be used by District as it may require without any additional costs to District. Neither the Contractor nor any Subcontractor, or material or equipment supplier shall own or claim a copyright in the Drawings, Specifications, and other documents prepared by the Architect. District hereby grants the Contractor, Subcontractors, sub-subcontractors, and material or equipment suppliers a limited license to use applicable portions of the Drawings prepared for the Project in the execution of their Work under the Contract Documents.

10. CONTRACTOR'S SUBMITTALS AND SCHEDULES

Contractor's submittals shall comply with the provisions and requirements of the Specifications including, without limitation Submittals.

10.1 Schedule of Work, Schedule of Submittals, and Schedule of Values

10.1.1 Within **TEN (10)** calendar days after the date of the Notice to Proceed (unless otherwise specified in the Specifications), the Contractor shall prepare and submit to the District for review, in a form supported by sufficient data to substantiate its accuracy as the District may require:

10.1.1.1 Preliminary Schedule. A preliminary schedule of construction indicating the starting and completion dates of the various stages of the Work, including any information and following any form as may be specified in the Specifications. Once approved by District, this shall become the Construction Schedule. This schedule shall include and identify all tasks that are on the Project's critical path with a specific determination of the start and completion of each critical path task as well as all Contract milestones and each milestone's completion date(s) as may be required by the District.

10.1.1.1.1 The District is not required to approve a preliminary schedule of construction with early completion, i.e., one that shows early completion dates for the Work and/or milestones. Contractor shall not be entitled to extra compensation if the District approves a Construction Schedule with an early completion date and Contractor completes the Project beyond the date shown in the schedule but within the Contract Time. A Construction Schedule showing the Work completed in less than the Contract Time, the time

between the early completion date and the end of the Contract Time shall be Float.

10.1.1.2 Preliminary Schedule of Values. A preliminary schedule of values for all of the Work, which must include quantities and prices of items aggregating the Contract Price and must subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Unless the Special Conditions contain different limits, this preliminary schedule of values shall include, at a minimum, the following information and the following structure:

10.1.1.2.1 Divided into at least the following categories:

- 10.1.1.2.1.1 Overhead and profit;
- 10.1.1.2.1.2 Supervision;
- 10.1.1.2.1.3 General conditions;
- 10.1.1.2.1.4 Layout;
- 10.1.1.2.1.5 Mobilization;
- 10.1.1.2.1.6 Submittals;
- 10.1.1.2.1.7 Bonds and insurance;
- 10.1.1.2.1.8 Close-out/Certification documentation;
- 10.1.1.2.1.9 Demolition;
- 10.1.1.2.1.10 Installation;
- 10.1.1.2.1.11 Rough-in;
- 10.1.1.2.1.12 Finishes;
- 10.1.1.2.1.13 Testing;
- 10.1.1.2.1.14 Punchlist and District acceptance.

10.1.1.2.2 And also divided by each of the following areas:

- 10.1.1.2.2.1 Site work;
- 10.1.1.2.2.2 By each building;
- 10.1.1.2.2.3 By each floor.

10.1.1.2.3 The preliminary schedule of values shall not provide for values any greater than the following percentages of the Contract value:

- 10.1.1.2.3.1 Mobilization and layout combined to equal not more than 1%;
- 10.1.1.2.3.2 Submittals, samples and shop drawings combined to equal not more than 3%;
- 10.1.1.2.3.3 Bonds and insurance combined to equal not more than 2%.
- 10.1.1.2.3.4 Punchlist/As-builts/Closeout documentation shall have a value in the preliminary schedule of not less than 5%.

10.1.1.2.4 Notwithstanding any provision of the Contract Documents to the contrary, payment of the Contractor's overhead, supervision, general conditions costs, and profit, as reflected in the Cost Breakdown, shall be paid based on percentage complete, with the disbursement of Progress Payments and the Final Payment.

10.1.1.2.5 Contractor shall certify that the preliminary schedule of values as submitted to the District is accurate and reflects the costs as developed in preparing Contractor's bid. For example, without limiting the foregoing, Contractor shall not "front-load" the preliminary schedule of values with dollar amounts greater than the value of activities performed early in the Project.

10.1.1.2.6 The preliminary schedule of values shall be subject to the District's review and approval of the form and content thereof. In the event that the District objects to any portion of the preliminary schedule of values, the District shall notify the Contractor, in writing, of the District's objection(s) to the preliminary schedule of values. Within five (5) calendar days of the date of the District's written objection(s), Contractor shall submit a revised preliminary schedule of values to the District for review and approval. The foregoing procedure for the preparation, review and approval of the preliminary schedule of values shall continue until the District has approved the entirety of the preliminary schedule of values.

10.1.1.2.7 Once the preliminary schedule of values is approved by the District, this shall become the Schedule of Values. The Schedule of Values shall not be thereafter modified or amended by the Contractor without the prior consent and approval of the District, which may be granted or withheld in the sole discretion of the District.

10.1.1.3 Preliminary Schedule of Submittals. A preliminary schedule of submittals, including Shop Drawings, Product Data, and Samples submittals. Once approved by District, this shall become the Submittal Schedule. All submittals shall be forwarded to the District by the date indicated on the approved Submittal Schedule, unless an earlier date is necessary to maintain the Construction Schedule, in which case those submittals shall be forwarded to the District so as not to delay the Construction Schedule. Upon request by the District, Contractor shall provide an electronic copy of all submittals to the District. All submittals shall be submitted no later than 90 days after the Notice to Proceed.

10.1.1.4 Safety Plan.

10.1.1.5 Contractor's Safety Plan specifically adapted for the Project. Contractor's Safety Plan shall comply with the following requirements:

10.1.1.5.1 All applicable requirements of California Division of Occupational Safety and Health ("CalOSHA") and/or of the United States Occupational Safety and Health Administration ("OSHA").

10.1.1.5.2 All provisions regarding Project safety, including all applicable provisions in these General Conditions.

10.1.1.5.3 Contractor's Safety Plan shall be in English and in the language(s) of the Contractor's and its Subcontractors' employees.

10.1.1.6 Complete Registered Subcontractors List. The name, address, telephone number, facsimile number, California State Contractors License number, classification, DIR registration number and monetary value of all

Subcontracts of any tier for parties furnishing labor, material, or equipment for completion of the Project.

10.1.2 Contractor must provide all schedules both in hard copy and electronically, in a format (e.g., Microsoft Project or Primavera) approved in advance by the District.

10.1.3 The District will review the schedules submitted and the Contractor shall make changes and corrections in the schedules as requested by the District and resubmit the schedules until approved by the District.

10.1.4 The District shall have the right at any time to revise the schedule of values if, in the District's sole opinion, the schedule of values does not accurately reflect the value of the Work performed.

10.1.5 All schedules must be approved by the District before Contractor can rely on them as a basis for payment.

10.2 Monthly Progress Schedule(s)

10.2.1 Contractor shall provide Monthly Progress Schedule(s) to the District. A Monthly Progress Schedule shall update the approved Construction Schedule or the last Monthly Progress Schedule, showing all work completed and to be completed as well as updating the Registered Subcontractors List. The monthly Progress Schedule shall be sent within the timeframe requested by the District and shall be in a format acceptable to the District and contain a written narrative of the progress of work that month and any changes, delays, or events that may affect the work. The process for District approval of the Monthly Progress Schedule shall be the same as the process for approval of the Construction Schedule.

10.2.2 Contractor shall submit Monthly Progress Schedule(s) with all payment applications.

10.2.3 Contractor must provide all schedules both in hard copy and electronically, in a format (e.g., Microsoft Project or Primavera) approved in advance by the District.

10.2.4 The District will review the schedules submitted and the Contractor shall make changes and corrections in the schedules as requested by the District and resubmit the schedules until approved by the District.

10.2.5 The District shall have the right at any time to revise the schedule of values if, in the District's sole opinion, the schedule of values does not accurately reflect the value of the Work performed.

10.2.6 All schedules must be approved by the District before Contractor can rely on them as a basis for payment.

10.3 Material Safety Data Sheets (MSDS)

Contractor is required to ensure Material Safety Data Sheets are available in a readily accessible place at the Site for any material requiring a Material Safety Data Sheet per the federal "Hazard Communication" standard, or employees' "right to know" law. The

Contractor is also required to ensure proper labeling on substances brought onto the job site and that any person working with the material or within the general area of the material is informed of the hazards of the substance and follows proper handling and protection procedures. Two additional copies of the Material Safety Data Sheets shall also be submitted directly to the District.

10.4 Submittals

10.4.1 Architect's favorable review shall neither be construed as a complete check nor relieve the Contractor, Subcontractor, manufacturer, fabricator, or supplier from responsibility for any deficiency that may exist or from any departures or deviations from the requirements of the Contract Documents unless the Contractor has, in writing, called Architect's attention to the deviations at the time of submission and the Architect has given specific written response. "Favorable review" shall mean merely that Architect has no objection to Contractor using, upon Contractor's own full responsibility, plan or method of Work proposed, or furnishing materials or equipment proposed.

11. SITE ACCESS, CONDITIONS, AND REQUIREMENTS

11.1 Site Investigation

Before bidding on this Work, Contractor shall make a careful investigation of the Site and thoroughly familiarize itself with the requirements of the Contract. By the act of submitting a bid for the Work included in this Contract, Contractor shall be deemed to have made a complete study and investigation, and to be familiar with and accepted the existing conditions of the Site.

Prior to commencing the Work, Contractor and the District's representative shall survey the Site to document the condition of the Site. Contractor will record the survey in digital videotape format and provide an electronic copy to the District within fourteen (14) days of the survey. This electronic record shall serve as a basis for determining any damages caused by the Contractor during the Project. The Contractor may also document any pre-existing conditions in writing, provided that both the Contractor and the District's representative agree on said conditions and sign a memorandum documenting the same.

11.2 Soils Investigation Report

11.2.1 When a soils investigation report obtained from test holes at Site or for the Project is available, that report may be available to the Contractor but shall not be a part of this Contract and shall not alleviate or excuse the Contractor's obligation to perform its own investigation. Any information obtained from that report or any information given on Drawings as to subsurface soil condition or to elevations of existing grades or elevations of underlying rock is approximate only, is not guaranteed, does not form a part of this Contract, and Contractor may not rely thereon. By submitting its bid, Contractor acknowledges that it has made visual examination of Site and has made whatever tests Contractor deems appropriate to determine underground condition of soil. Although any such report is not a part of this Contract, recommendations from the report may be included in the Drawings, Specifications, or other Contract Documents. It is Contractor's sole responsibility to thoroughly review all Contract Documents, Drawings, and Specifications.

11.2.2 Contractor agrees that no claim against District will be made by Contractor for damages and hereby waives any rights to damages if, during progress of Work, Contractor encounters subsurface or latent conditions at Site materially differing from those shown on Drawings or indicated in Specifications, or for unknown conditions of an unusual nature that differ materially from those ordinarily encountered in the work of the character provided for in Plans and Specifications, except as indicated in the provisions of these General Conditions regarding trenches, trenching, and/or existing utility lines.

11.3 Access to Work

District and its representatives shall at all times have access to Work wherever it is in preparation or progress, including storage and fabrication. Contractor shall provide safe and proper facilities for such access so that District's representatives may perform their functions.

11.4 Layout and Field Engineering

11.4.1 All field engineering required for layout of this Work and establishing grades for earthwork operations shall be furnished by Contractor at its expense. This Work shall be done by a qualified, California-registered civil engineer approved in writing by District and Architect. Any required Record and/or As-Built Drawings of Site development shall be prepared by the approved civil engineer.

11.4.2 The Contractor shall be responsible for having ascertained pertinent local conditions such as location, accessibility, and general character of the Site and for having satisfied itself as to the conditions under which the Work is to be performed. Contractor shall follow best practices, including but not limited to potholing to avoid utilities. District shall not be liable for any claim for allowances because of Contractor's error, failure to follow best practices, or negligence in acquainting itself with the conditions at the Site.

11.4.3 Contractor shall protect and preserve established benchmarks and monuments and shall make no changes in locations without the prior written approval of District. Contractor shall replace any benchmarks or monuments that are lost or destroyed subsequent to proper notification of District and with District's approval.

11.5 Utilities

Utilities shall be provided as indicated in the Specifications.

11.6 Sanitary Facilities

Sanitary facilities shall be provided as indicated in the Specifications.

11.7 Surveys

Contractor shall provide surveys done by a California-licensed civil engineer surveyor to determine locations of construction, grading, and site work as required to perform the Work.

11.8 Regional Notification Center

The Contractor, except in an emergency, shall contact the appropriate regional notification center at least two (2) days prior to commencing any excavation if the excavation will be conducted in an area or in a private easement that is known, or reasonably should be known, to contain subsurface installations other than the underground facilities owned or operated by the District, and obtain an inquiry identification number from that notification center. No excavation shall be commenced and/or carried out by the Contractor unless an inquiry identification number has been assigned to the Contractor or any Subcontractor and the Contractor has given the District the identification number. Any damages arising from Contractor's failure to make appropriate notification shall be at the sole risk and expense of the Contractor. Any delays caused by failure to make appropriate notification shall be at the sole risk of the Contractor and shall not be considered for an extension of the Contract Time.

11.9 Existing Utility Lines

11.9.1 Pursuant to Government Code section 4215, District assumes the responsibility for removal, relocation, and protection of main or trunk utility lines and facilities located on the construction Site at the time of commencement of construction under this Contract with respect to any such utility facilities that are not identified in the Plans and Specifications. Contractor shall not be assessed for liquidated damages for delay in completion of the Project caused by failure of District or the owner of a utility to provide for removal or relocation of such utility facilities.

11.9.2 Locations of existing utilities provided by District shall not be considered exact, but approximate within a reasonable margin and shall not relieve Contractor of responsibilities to exercise reasonable care or costs of repair due to Contractor's failure to do so. District shall compensate Contractor for the costs of locating, repairing damage not due to the failure of Contractor to exercise reasonable care, and removing or relocating such utility facilities not indicated in the Plans and Specifications with reasonable accuracy, and for equipment necessarily idle during such work.

11.9.3 No provision herein shall be construed to preclude assessment against Contractor for any other delays in completion of the Work. Nothing in this Article shall be deemed to require District to indicate the presence of existing service laterals, appurtenances, or other utility lines, within the exception of main or trunk utility lines or whenever the presence of these utilities on the Site of the construction Project can be inferred from the presence of other visible facilities, such as buildings, meter junction boxes, on or adjacent to the Site of the construction.

11.9.4 If Contractor, while performing Work under this Contract, discovers utility facilities not identified by District in Contract Plans and Specifications, Contractor shall immediately notify the District and the utility in writing. The cost of repair for damage to above-mentioned visible facilities without prior written notification to the District shall be borne by the Contractor.

11.10 Notification

Contractor understands, acknowledges and agrees that the purpose for prompt notification to the District pursuant to these provisions is to allow the District to investigate the condition(s) so that the District shall have the opportunity to decide how

the District desires to proceed as a result of the condition(s). Accordingly, failure of Contractor to promptly notify the District in writing, pursuant to these provisions, shall constitute Contractor's waiver of any claim for damages or delay incurred as a result of the condition(s).

11.11 Hazardous Materials

Contractor shall comply with all provisions and requirements of the Contract Documents related to hazardous materials including, without limitation, Hazardous Materials Procedures and Requirements.

11.12 No Signs

Neither the Contractor nor any other person or entity shall display any signs not required by law or the Contract Documents at the Site, fences trailers, offices, or elsewhere on the Site without specific prior written approval of the District.

12. TRENCHES

12.1 Trenches Greater Than Five Feet

Pursuant to Labor Code section 6705, if the Contract Price exceeds \$25,000 and involves the excavation of any trench or trenches five (5) feet or more in depth, the Contractor shall, in advance of excavation, promptly submit to the District and/or a registered civil or structural engineer employed by the District or Architect, a detailed plan, stamped by a licensed engineer retained by the Contractor, showing the design of shoring for protection from the hazard of caving ground during the excavation of such trench or trenches.

12.2 Excavation Safety

If such plan varies from the Shoring System Standards established by the Construction Safety Orders, the plan shall be prepared by a registered civil or structural engineer, but in no case shall such plan be less effective than that required by the Construction Safety Orders. No excavation of such trench or trenches shall be commenced until said plan has been accepted by the District or by the person to whom authority to accept has been delegated by the District.

12.3 No Tort Liability of District

Pursuant to Labor Code section 6705, nothing in this Article shall impose tort liability upon the District or any of its employees.

12.4 No Excavation without Permits

The Contractor shall not commence any excavation Work until it has secured all necessary permits including the required CalOSHA excavation/shoring permit. Any permits shall be prominently displayed on the Site prior to the commencement of any excavation.

12.5 Discovery of Hazardous Waste and/or Unusual Conditions

12.5.1 Pursuant to Public Contract Code section 7104, if the Work involves digging trenches or other excavations that extend deeper than four feet below the Surface, the Contractor shall promptly, and before the following conditions are disturbed, notify the District, in writing, of any:

12.5.1.1 Material that the Contractor believes may be material that is hazardous waste, as defined in section 25117 of the Health and Safety Code, is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

12.5.1.2 Subsurface or latent physical conditions at the Site differing from those indicated.

12.5.1.3 Unknown physical conditions at the Site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

12.5.2 The District shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the Work, shall issue a Change Order under the procedures described herein.

12.5.3 In the event that a dispute arises between District and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the Work, the Contractor shall not be excused from any scheduled completion date provided for by the Contract, but shall proceed with all work to be performed under the Contract. The Contractor shall retain any and all rights provided either by Contract or by law that pertain to the resolution of disputes and protests.

13. INSURANCE AND BONDS

13.1 Insurance

Unless different provisions and/or limits are indicated in the Special Conditions, all insurance required of Contractor and/or its Subcontractor(s) shall be at least as broad as the amounts and include the provisions set forth herein.

13.1.1 Commercial General Liability and Automobile Liability Insurance

13.1.1.1 Contractor shall procure and maintain, during the life of this Contract, Commercial General Liability Insurance and Automobile Liability Insurance that shall protect Contractor, District, State, Construction Manager(s), Project Inspector(s), and Architect(s) from all claims for bodily injury, property damage, personal injury, death, advertising injury, and medical payments arising from, or in connection with, operations under this Contract. This coverage shall be provided in a form at least as broad as Insurance Services (ISO) Form CG 0001 11188. Contractor shall ensure that Products Liability and Completed Operations coverage, Fire Damage Liability coverage, and Automobile Liability Insurance

coverage including owned, non-owned, and hired automobiles, are included within the above policies and at the required limits, or Contractor shall procure and maintain these coverages separately.

13.1.1.2 Contractor's deductible or self-insured retention for its Commercial General Liability Insurance policy shall not exceed \$25,000 unless approved in writing by District.

13.1.1.3 All such policies shall be written on an occurrence form.

13.1.2 Excess Liability Insurance

13.1.2.1 If Contractor's underlying policy limits are less than required, subject to the District's sole discretion, Contractor may procure and maintain, during the life of this Contract, an Excess Liability Insurance Policy to meet the policy limit requirements of the required policies in order to satisfy, in the aggregate with its underlying policy, the insurance requirements herein.

13.1.2.2 There shall be no gap between the per occurrence amount of any underlying policy and the start of the coverage under the Excess Liability Insurance Policy. Any Excess Liability Insurance Policy shall be written on a following form and shall protect Contractor, District, State, Construction Manager(s), Project Manager(s), and Architect(s) in amounts and including the provisions as set forth in the Supplementary Conditions (if any) and/or Special Conditions, and that complies with all requirements for Commercial General Liability and Automobile Liability and Employers' Liability Insurance.

13.1.2.3 The District, in its sole discretion, may accept the Excess Liability Insurance Policy that brings Contractor's primary limits to the minimum requirements herein.

13.1.3 Subcontractor(s):

Contractor shall require its Subcontractor(s), if any, to procure and maintain Commercial General Liability Insurance, Automobile Liability Insurance, and Excess Liability Insurance (if Subcontractor elects to satisfy, in part the insurance required herein by procuring and maintaining an Excess Liability Insurance Policy) with forms of coverage and limits equal to the amounts required of the Contractor.

13.1.4 Workers' Compensation and Employers' Liability Insurance

13.1.4.1 In accordance with provisions of section 3700 of the California Labor Code, the Contractor and every Subcontractor shall be required to secure the payment of compensation to its employees.

13.1.4.2 Contractor shall procure and maintain, during the life of this Contract, Workers' Compensation Insurance and Employers' Liability Insurance for all of its employees engaged in work under this Contract, on/or at the Site of the Project. This coverage shall cover, at a minimum, medical and surgical treatment, disability benefits, rehabilitation therapy, and survivors' death benefits. Contractor shall require its Subcontractor(s), if any, to procure and maintain Workers' Compensation Insurance and Employers' Liability Insurance for all employees of Subcontractor(s). Any class of employee or employees not covered

by a Subcontractor's insurance shall be covered by Contractor's insurance. If any class of employee or employee engaged in Work under this Contract, on or at the Site of the Project, is not protected under the Workers' Compensation Insurance, Contractor shall provide, or shall cause a Subcontractor to provide, adequate insurance coverage for the protection of any employee(s) not otherwise protected before any of those employee(s) commence work.

13.1.5 Builder's Risk Insurance: Builder's Risk "All Risk" Insurance

Contractor shall procure and maintain, during the life of this Contract, Builder's Risk (Course of Construction), or similar first party property coverage acceptable to the District, issued on a replacement cost value basis. The cost shall be consistent with the total replacement cost of all insurable Work of the Project included within the Contract Documents. Coverage is to insure against all risks of accidental physical loss and shall include without limitation the perils of vandalism and/or malicious mischief (both without any limitation regarding vacancy or occupancy), sprinkler leakage, civil authority, theft, sonic disturbance, earthquake, flood, collapse, wind, rain, dust, fire, war, terrorism, lightning, smoke, and rioting. Coverage shall include debris removal, demolition, increased costs due to enforcement of all applicable ordinances and/or laws in the repair and replacement of damaged and undamaged portions of the property, and reasonable costs for the Architect's and engineering services and expenses required as a result of any insured loss upon the Work and Project, including completed Work and Work in progress, to the full insurable value thereof.

13.1.6 Pollution Liability Insurance

13.1.6.1 Contractor shall procure and maintain Pollution Liability Insurance that shall protect Contractor, District, State, Construction Manager(s), Project Inspector(s), and Architect(s) from all claims for bodily injury, property damage, including natural resource damage, cleanup costs, removal, storage, disposal, and/or use of the pollutant arising from operations under this Contract, and defense, including costs and expenses incurred in the investigation, defense, or settlement of claims. Coverage shall apply to sudden and/or gradual pollution conditions resulting from the escape or release of smoke, vapors, fumes, acids, alkalis, toxic chemicals, liquids, or gases, natural gas, waste materials, or other irritants, contaminants, or pollutants, including asbestos. This coverage shall be provided in a form at least as broad as Insurance Services Offices, Inc. (ISO) Form CG 2415, or Contractor shall procure and maintain these coverages separately.

13.1.6.2 Contractor warrants that any retroactive date applicable to coverage under the policy shall predate the effective date of the Contract and that continuous coverage will be maintained or an extended reporting or discovery period will be exercised for a period of three (3) years, beginning from the time that the Work under the Contract is completed.

13.1.6.3 If Contractor is responsible for removing any pollutants from a site, then Contractor shall ensure that Any Auto, including owned, non-owned, and hired, is included within the above policies and at the required limits, to cover its automobile exposure from transporting the pollutants from the site to an approved disposal site. This coverage shall include the Motor Carrier Act Endorsement, MCS 90.

13.1.7 Proof of Insurance and Other Requirements: Endorsements and Certificates

13.1.7.1 Contractor shall not commence Work nor shall it allow any Subcontractor to commence Work under this Contract, until Contractor and its Subcontractor(s) have procured all required insurance and Contractor has delivered in duplicate to the District complete endorsements (or entire insurance policies) and certificates indicating the required coverages have been obtained, and the District has approved these documents.

13.1.7.2 Endorsements, certificates, and insurance policies shall include the following:

13.1.7.2.1 A clause stating the following, or other language acceptable to the District:

“This policy shall not be canceled until written notice to District, Architect, and Construction Manager stating date of the cancellation by the insurance carrier. Date of cancellation may not be less than thirty (30) days after date of mailing notice.”

13.1.7.2.2 Language stating in particular those insured, extent of insurance, location and operation to which insurance applies, expiration date, to whom cancellation and reduction notice will be sent, and length of notice period.

13.1.7.2.3 All endorsements, certificates and insurance policies shall state that District, its trustees, employees and agents, the State of California, Construction Manager(s), Project Manager(s), Inspector(s) and Architect(s) are named additional insureds under all policies except Workers’ Compensation Insurance and Employers’ Liability Insurance.

13.1.7.2.4 All endorsements shall waive any right to subrogation against any of the named additional insureds.

13.1.7.2.5 Contractor’s and Subcontractors’ insurance policy(s) shall be primary and non-contributory to any insurance or self-insurance maintained by District, its trustees, employees and/or agents, the State of California, Construction Manager(s), Project Manager(s), Inspector(s), and/or Architect(s).

13.1.7.2.6 Contractor’s insurance limit shall apply separately to each insured against whom a claim is made or suit is brought.

13.1.7.3 No policy shall be amended, canceled or modified, and the coverage amounts shall not be reduced, until Contractor or Contractor’s broker has provided written notice to District, Architect(s), and Construction Manager(s) stating date of the amendment, modification, cancellation or reduction, and a description of the change. Date of amendment, modification, cancellation or reduction may not be less than thirty (30) days after date of mailing notice.

13.1.7.4 Insurance written on a “claims made” basis shall be retroactive to a date that coincides with or precedes Contractor’s commencement of Work,

including subsequent policies purchased as renewals or replacements. Said policy is to be renewed by the Contractor and all Subcontractors for a period of five (5) years following completion of the Work or termination of this Agreement. Such insurance must have the same coverage and limits as the policy that was in effect during the term of this Agreement, and will cover the Contractor and all Subcontractors for all claims made.

13.1.7.5 Unless otherwise stated in the Special Conditions, all of Contractor’s insurance shall be with insurance companies with an A.M. Best rating of no less than **A: VII**.

13.1.7.6 The insurance requirements set forth herein shall in no way limit the Contractor’s liability arising out of or relating to the performance of the Work or related activities.

13.1.7.7 Failure of Contractor and/or its Subcontractor(s) to comply with the insurance requirements herein shall be deemed a material breach of the Contract.

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13.1.8 Insurance Policy Limits

13.1.8.1 Unless different limits are indicated in the Special Conditions, the limits of insurance shall not be less than the following amounts:

Commercial General Liability	Product Liability and Completed Operations, Fire Damage Liability – Split Limit	\$1,000,000 per occurrence; \$2,000,000 aggregate
Automobile Liability – Any Auto	Combined Single Limit	Personal vehicles: \$500,000 Commercial vehicles: \$1,000,000
Workers’ Compensation		Statutory limits pursuant to State law
Employer’s Liability		\$1,000,000
Builder’s Risk (Course of Construction)		Issued for the value and scope of Work indicated herein
Pollution Liability		\$1,000,000 per claim; \$2,000,000 aggregate

13.1.8.2 If Contractor normally carries insurance in an amount greater than the minimum amounts required by District, that greater amount shall become the minimum required amount of insurance for purposes of the Contract. Therefore, Contractor hereby acknowledges and agrees that all insurance carried by it shall be deemed liability coverage for all actions it performs in connection with the Contract.

13.2 Contract Security - Bonds

13.2.1 Contractor shall furnish two surety bonds issued by a California admitted surety insurer as follows:

13.2.1.1 Performance Bond: A bond in an amount at least equal to one hundred percent (100%) of Contract Price as security for faithful performance of this Contract.

13.2.1.2 Payment Bond: A bond in an amount at least equal to one hundred percent (100%) of the Contract Price as security for payment of persons performing labor and/or furnishing materials in connection with this Contract.

13.2.2 Cost of bonds shall be included in the Bid and Contract Price.

13.2.3 All bonds related to this Project shall be in the forms set forth in these Contract Documents and shall comply with all requirements of the Contract Documents, including, without limitation, the bond forms.

14. WARRANTY/GUARANTEE/INDEMNITY

14.1 Warranty/Guarantee

14.1.1 The Contractor shall obtain and preserve for the benefit of the District, manufacturer's warranties on materials, fixtures, and equipment incorporated into the Work.

14.1.2 In addition to guarantees required elsewhere, Contractor shall, and hereby does guarantee and warrant all Work furnished on the job against all defects for a period of **TWO (2)** years after the later of the following dates, unless a longer period is provided for in the Contract Documents:

14.1.2.1 The acceptance by the District's governing board of the Work, subject to these General Conditions, or

14.1.2.2 The date that commissioning for the Project, if any, was completed.

At the District's sole option, Contractor shall repair or replace any and all of that Work, together with any other Work that may be displaced in so doing, that may prove defective in workmanship and/or materials within a **TWO (2)** year period from date of completion as defined above, unless a longer period is provided for in the Contract Documents, without expense whatsoever to District. In the event of failure of Contractor and/or Surety to commence and pursue with diligence said replacements or repairs within ten (10) days after being notified in writing, Contractor and Surety hereby acknowledge and agree that District is authorized to proceed to have defects repaired and made good at expense of Contractor and/or Surety who hereby agree to pay costs and charges therefore immediately on demand.

14.1.3 If, in the opinion of District, defective work creates a dangerous condition or requires immediate correction or attention to prevent further loss to District or to prevent interruption of District operations, District will attempt to give the notice required above. If Contractor or Surety cannot be contacted or neither complies with

District's request for correction within a reasonable time as determined by District, District may, notwithstanding the above provision, proceed to make any and all corrections and/or provide attentions the District believes are necessary. The costs of correction or attention shall be charged against Contractor and Surety of the guarantees provided in this Article or elsewhere in this Contract.

14.1.4 The above provisions do not in any way limit the guarantees on any items for which a longer guarantee is specified or on any items for which a manufacturer gives a guarantee for a longer period. Contractor shall furnish to District all appropriate guarantee or warranty certificates as indicated in the Specifications or upon request by District.

14.1.5 Nothing herein shall limit any other rights or remedies available to District.

14.2 Indemnity and Defense

14.2.1 To the furthest extent permitted by California law, the Contractor shall indemnify, keep and hold harmless the District, the Architect(s), and the Construction Manager(s), their respective consultants, separate contractors, board members, officers, representatives, agents, and employees, in both individual and official capacities ("Indemnitees"), against all suits, claims, injury, damages, losses, and expenses ("Claims"), including but not limited to attorney's fees, caused by, arising out of, resulting from, or incidental to, in whole or in part, the performance of the Work under this Contract by the Contractor, its Subcontractors, vendors, or suppliers. However, the Contractor's indemnification and hold harmless obligation shall be reduced by the proportion of the Indemnitees' and/or Architect's liability to the extent the Claim(s) is/are caused by the sole negligence, active negligence, or willful misconduct of the Indemnitees, and/or defects in design furnished by the Architect, as found by a court or arbitrator of competent jurisdiction. This indemnification and hold harmless obligation of the Contractor shall not be construed to negate, abridge, or otherwise reduce any right or obligation of indemnity that would otherwise exist or arise as to any Indemnitee or other person described herein. This indemnification and hold harmless obligation includes, but is not limited to, any failure or alleged failure by Contractor to comply with any provision of law, any failure or alleged failure to timely and properly fulfill all of its obligations under the Contract Documents in strict accordance with their terms, and without limitation, any failure or alleged failure of Contractor's obligations regarding any stop payment notice actions or liens, including Civil Wage and Penalty Assessments and/or Orders by the DIR.

14.2.2 To the furthest extent permitted by California law, Contractor shall also defend Indemnitees, at its own expense, including but not limited to attorneys' fees and costs, against all Claims caused by, arising out of, resulting from, or incidental to, in whole or in part, the performance of the Work under this Contract by the Contractor, its Subcontractors, vendors, or suppliers. However, without impacting Contractor's obligation to provide an immediate and ongoing defense of Indemnitees, the Contractor's defense obligation shall be retroactively reduced by the proportion of the Indemnitees' and/or Architect's liability to the extent caused by the sole negligence, active negligence, or willful misconduct of the Indemnitees, and/or defects in design furnished by the Architect, as found by a court or arbitrator of competent jurisdiction. The District shall have the right to accept or reject any legal representation that Contractor proposes to defend the Indemnitees. If any Indemnitee provides its own defense due to failure to timely respond to tender of

defense, rejection of tender of defense, or conflict of interest of proposed counsel, Contractor shall reimburse such Indemnitee for any expenditures. Contractor's defense obligation shall not be construed to negate, abridge, or otherwise reduce any right or obligation of defense that would otherwise exist as to any Indemnitee or other person described herein. Contractor's defense obligation includes, but is not limited to, any failure or alleged failure by Contractor to comply with any provision of law, any failure or alleged failure to timely and properly fulfill all of its obligations under the Contract Documents in strict accordance with their terms, and without limitation, any failure or alleged failure of Contractor's obligations regarding any stop payment notice actions or liens, including Civil Wage and Penalty Assessments and/or Orders by the DIR. The Contractor shall give prompt notice to the District in the event of any Claim(s).

14.2.3 Without limitation of the provisions herein, if the Contractor's obligation to indemnify and hold harmless the Indemnitees or its obligation to defend Indemnitees as provided herein shall be determined to be void or unenforceable, in whole or in part, it is the intention of the parties that these circumstances shall not otherwise affect the validity or enforceability of the Contractor's agreement to indemnify, defend, and hold harmless the rest of the Indemnitees, as provided herein. Further, the Contractor shall be and remain fully liable on its agreements and obligations herein to the fullest extent permitted by law.

14.2.4 Pursuant to Public Contract Code section 9201, the District shall provide timely notification to Contractor of the receipt of any third-party Claim relating to this Contract. The District shall be entitled to recover its reasonable costs incurred in providing said notification.

14.2.5 In any and all Claims against any of the Indemnitees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the Contractor's indemnification obligation herein shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Contractor or any Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

14.2.6 The District may retain so much of the moneys due the Contractor as shall be considered necessary, until disposition of any such Claims or until the District, Architect(s) and Construction Manager(s) have received written agreement from the Contractor that they will unconditionally defend the District, Architect(s) and Construction Manager(s), their respective officers, agents and employees, and pay any damages due by reason of settlement or judgment.

14.2.7 The Contractor's defense and indemnification obligations hereunder shall survive the completion of Work, the warranty/guarantee period, and the termination of the Contract.

15. TIME

15.1 Notice to Proceed

15.1.1 District may issue a Notice to Proceed within ninety (90) days from the date of the Notice of Award. Once Contractor has received the Notice to Proceed,

Contractor shall complete the Work within the period of time indicated in the Contract Documents.

15.1.2 In the event that the District desires to postpone issuing the Notice to Proceed beyond ninety (90) days from the date of the Notice of Award, it is expressly understood that with reasonable notice to the Contractor, the District may postpone issuing the Notice to Proceed. It is further expressly understood by Contractor that Contractor shall not be entitled to any claim of additional compensation as a result of the postponement of the issuance of the Notice to Proceed.

15.1.3 If the Contractor believes that a postponement of issuance of the Notice to Proceed will cause a hardship to Contractor, Contractor may terminate the Contract. Contractor's termination due to a postponement shall be by written notice to District within ten (10) days after receipt by Contractor of District's notice of postponement. It is further understood by Contractor that in the event that Contractor terminates the Contract as a result of postponement by the District, the District shall only be obligated to pay Contractor for the Work that Contractor had performed at the time of notification of postponement. Should Contractor terminate the Contract as a result of a notice of postponement, District shall have the authority to award the Contract to the next lowest responsive responsible bidder.

15.2 Computation of Time / Adverse Weather

15.2.1 The Contractor will only be allowed a time extension for Adverse Weather conditions if requested by Contractor in compliance with the time extension request procedures and only if all the following conditions are met:

15.2.1.1 The weather conditions constitute Adverse Weather, as defined herein;

15.2.1.2 Contractor can verify that the Adverse Weather caused delays in excess of five (5) hours of the indicated labor required to complete the scheduled tasks of Work on the day affected by the Adverse Weather;

15.2.1.3 The Contractor's crew is dismissed as a result of the Adverse Weather;

15.2.1.4 Said delay adversely affects the critical path in the Construction Schedule; and

15.2.1.5 The number of days of Adverse Weather exceeds the following parameters:

January	10	July	0
February	8	August	0
March	7	September	0
April	4	October	4
May	2	November	6
June	0	December	8

15.2.2 If the aforementioned conditions are met, a non-compensable day-for-day extension will only be allowed for those days in excess of those indicated herein.

15.2.3 The Contractor shall work seven (7) days per week, if necessary, irrespective of inclement weather, to maintain access and the Construction Schedule, and to protect the Work under construction from the effects of Adverse Weather, all at no further cost to the District.

15.2.4 The Contract Time has been determined with consideration given to the average climate weather conditions prevailing in the County in which the Project is located.

15.3 Hours of Work

15.3.1 Sufficient Forces

Contractor and Subcontractors shall continuously furnish sufficient and competent work forces with the required levels of familiarity with the Project and skill, training and experience to ensure the prosecution of the Work in accordance with the Construction Schedule.

15.3.2 Performance During Working Hours

Work shall be performed during regular working hours as permitted by the appropriate governmental agency except that in the event of an emergency, or when required to complete the Work in accordance with job progress, Work may be performed outside of regular working hours with the advance written consent of the District and approval of any required governmental agencies.

15.3.3 No Work during State Testing

Contractor shall, at no additional cost to the District and at the District's request, coordinate its Work to not disturb District students including, without limitation, not performing any Work when students at the Site are taking State or Federally-required tests. The District or District's Representative will provide Contractor with a schedule of test dates concurrent with the District's issuance of the Notice to Proceed, or as soon as test dates are made available to the District.

15.4 Progress and Completion

15.4.1 Time of the Essence

Time limits stated in the Contract Documents are of the essence to the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

15.4.2 No Commencement Without Insurance or Bonds

The Contractor shall not commence operations on the Project or elsewhere prior to the effective date of insurance and bonds. The date of commencement of the Work shall not be changed by the effective date of such insurance or bonds. If Contractor commences Work without insurance and bonds, all Work is performed at Contractor's peril and shall not be compensable until and unless Contractor secures bonds and insurance pursuant to the terms of the Contract Documents and subject to District claim for damages.

15.5 Schedule

Contractor shall provide to District, Construction Manager, and Architect a schedule in conformance with the Contract Documents and as required in the Notice to Proceed and the Contractor's Submittals and Schedules section of these General Conditions.

15.6 Expeditious Completion

The Contractor shall proceed expeditiously with adequate forces and shall achieve Completion within the Contract Time.

16. EXTENSIONS OF TIME – LIQUIDATED DAMAGES

16.1 Liquidated Damages

Contractor and District hereby agree that the exact amount of damages for failure to complete the Work within the time specified is extremely difficult or impossible to determine. If the Work is not completed within the time specified in the Contract Documents, it is understood that the District will suffer damage. It being impractical and unfeasible to determine the amount of actual damage, it is agreed the Contractor shall pay to District as fixed and liquidated damages, and not as a penalty, the amount set forth in the Agreement for each calendar day of delay in completion. Contractor and its Surety shall be liable for the amount thereof pursuant to Government Code section 53069.85.

16.2 Excusable Delay

16.2.1 Contractor shall not be charged for liquidated damages because of any delays in completion of the Work which are not the fault of Contractor or its Subcontractors, including acts of God as defined in Public Contract Code section 7105, acts of enemy, epidemics, and quarantine restrictions. Contractor shall, within five (5) calendar days of beginning of any delay, notify District in writing of causes of delay including documentation and facts explaining the delay and the direct correlation between the cause and effect. District shall review the facts and extent of any delay and shall grant extension(s) of time for completing Work when, in its judgment, the findings of fact justify an extension. Extension(s) of time shall apply only to that portion of Work affected by delay, and shall not apply to other portions of Work not so affected. An extension of time may only be granted if Contractor has timely submitted the Construction Schedule as required herein.

16.2.2 Contractor shall notify the District pursuant to the claims provisions in these General Conditions of any anticipated delay and its cause. Following submission of a claim, the District may determine whether the delay is to be considered avoidable or unavoidable, how long it continues, and to what extent the prosecution and completion of the Work might be delayed thereby.

16.2.3 In the event the Contractor requests an extension of Contract Time for unavoidable delay, such request shall be submitted in accordance with the provisions in the Contract Documents governing changes in Work. When requesting time, requests must be submitted with full justification and documentation. If the Contractor fails to submit justification, it waives its right to a time extension at a later date. Such justification must be based on the official Construction Schedule as updated at the time of occurrence of the delay or execution of Work related to any

changes to the Scope of Work. Any claim for delay must include the following information as support, without limitation:

16.2.3.1 The duration of the activity relating to the changes in the Work and the resources (manpower, equipment, material, etc.) required to perform the activities within the stated duration.

16.2.3.2 Specific logical ties to the Contract Schedule for the proposed changes and/or delay showing the activity/activities in the Construction Schedule that are affected by the change and/or delay. In particular, Contractor must show an actual impact to the schedule, after making a good faith effort to mitigate the delay by rescheduling the work, by providing an analysis of the schedule ("Time Impact Analysis"). Such Time Impact Analysis shall describe in detail the cause and effect of the delay and the impact on the critical dates in the Project schedule. (A portion of any delay of seven (7) days or more must be provided.)

16.2.3.3 A recovery schedule must be submitted within twenty (20) calendar days of written notification to the District of causes of delay.

16.3 No Additional Compensation for Delays Within Contractor's Control

16.3.1 Contractor is aware that governmental agencies, including, without limitation, the Division of the State Architect, the Department of General Services, gas companies, electrical utility companies, water districts, and other agencies may have to approve Contractor-prepared drawings or approve a proposed installation. Accordingly, Contractor shall include in its bid, time for possible review of its drawings and for reasonable delays and damages that may be caused by such agencies. Thus, Contractor is not entitled to make a claim for damages or delays arising from the review of Contractor's drawings.

16.3.2 Contractor shall only be entitled to compensation for delay when all of the following conditions are met:

16.3.2.1 The District is responsible for the delay;

16.3.2.2 The delay is unreasonable under the circumstances involved;

16.3.2.3 The delay was not within the contemplation of the District and Contractor;

16.3.2.4 The delay could not have been avoided or mitigated by Contractor's reasonable diligence; and

16.3.2.5 Contractor timely complies with the claims procedure of the Contract Documents.

16.3.3 Where a change in the Work extends the Contract Time, Contractor may request and recover additional, actual direct costs, provided that Contractor can demonstrate such additional costs are:

16.3.3.1 Actually incurred performing the Work;

16.3.3.2 Not compensated by the Markup allowed; and

16.3.3.3 Directly result from the extended Contract Time.

Contractor shall comply with all required procedures, documentation and time requirements in the Contract Documents. Contractor may not seek or recover such costs using formulas (e.g. Eichleay, labor factors).

16.4 Float or Slack in the Schedule

Float or slack is the amount of time between the early start date and the late start date, or the early finish date and the late finish date, of any of the activities in the schedule. Float or slack is not for the exclusive use of or benefit of either the District or the Contractor, but its use shall be determined solely by the District.

17. CHANGES IN THE WORK

17.1 No Changes Without Authorization

17.1.1 There shall be no change whatsoever in the Drawings, Specifications, or in the Work without an executed Change Order or a written Construction Change Directive authorized by the District as herein provided. District shall not be liable for the cost of any extra work or any substitutions, changes, additions, omissions, or deviations from the Drawings and Specifications unless the District's governing board has authorized the same and the cost thereof has been approved in writing by Change Order or Construction Change Directive in advance of the changed Work being performed. No extension of time for performance of the Work shall be allowed hereunder unless claim for such extension is made at the time changes in the Work are ordered, and such time duly adjusted and approved in writing in the Change Order or Construction Change Directive. Contractor shall be responsible for any costs incurred by the District for professional services and DSA fees and/or delay to the Project Schedule, if any, for DSA to review any request for changes to the DSA approved plans and specifications for the convenience of the Contractor and/or to accommodate the Contractor's means and methods. The provisions of the Contract Documents shall apply to all such changes, additions, and omissions with the same effect as if originally embodied in the Drawings and Specifications.

17.1.2 Contractor shall perform immediately all work that has been authorized by a fully executed Change Order or Construction Change Directive. Contractor shall be fully responsible for any and all delays and/or expenses caused by Contractor's failure to expeditiously perform this Work.

17.1.3 Should any Change Order result in an increase in the Contract Price or extend the Contract Time, the cost of or length of extension in that Change Order shall be agreed to, in writing, by the District in advance of the Work by Contractor, and shall be subject to the monetary limitations set forth in Public Contract Code section 20118.4. In the event that Contractor proceeds with any change in Work without a Change Order executed by the District or Construction Change Directive, Contractor waives any claim of additional compensation or time for that additional work. Under no circumstances shall Contractor be entitled to any claim of additional compensation or time not expressly requested by Contractor in a Proposed Change Order or approved by District in an executed Change Order.

17.1.4 A Change Order or Construction Change Directive will become effective when approved by the Board, notwithstanding that Contractor has not signed it. A

Change Order or Construction Change Directive will become effective without Contractor's signature provided District indicates it as a "Unilateral Change Order". Any dispute as to the adjustment in the Contract Price or Contract Time, if any, of the Unilateral Change Order shall be resolved pursuant to the Payment and Claims and Disputes provisions herein.

17.1.5 Contractor understands, acknowledges, and agrees that the reason for District authorization is so that District may have an opportunity to analyze the Work and decide whether the District shall proceed with the Change Order or alter the Project so that a change in Work becomes unnecessary.

17.2 Architect Authority

The Architect will have authority to order minor changes in the Work not involving any adjustment in the Contract Price, or an extension of the Contract Time, or a change that is inconsistent with the intent of the Contract Documents. These changes shall be effected by written Change Order, Construction Change Directive, by Architect's response(s) to RFI(s), or by Architect's Supplemental Instructions ("ASI").

17.3 Change Orders

17.3.1 A Change Order is a written instrument prepared and issued by the District and/or the Architect and signed by the District (as authorized by the District's Governing Board), the Contractor, the Architect, and approved by the Project Inspector (if necessary) and DSA (if necessary), stating their agreement regarding all of the following:

17.3.1.1 A description of a change in the Work;

17.3.1.2 The amount of the adjustment in the Contract Price, if any; and

17.3.1.3 The extent of the adjustment in the Contract Time, if any.

17.4 Construction Change Directives

17.4.1 A Construction Change Directive is a written order prepared and issued by the District, the Construction Manager, and/or the Architect and signed by the District and the Architect, directing a change in the Work. The District may, as provided by law, by Construction Change Directive and without invalidating the Contract, order changes in the Work consisting of additions, deletions, or other revisions. The adjustment to the Contract Price or Time, if any, is subject to the provisions of this section regarding Changes in the Work. If all or a portion of the Project is being funded by funds requiring approval by the State Allocation Board ("SAB"), these revisions may be subject to compensation once approval of same is received and funded by the SAB, and funds are released by the Office of Public School Construction ("OPSC"). Any dispute as to the adjustment in the Contract Price, if any, of the Construction Change Directive or timing of payment shall be resolved pursuant to the Payment and Claims and Disputes provisions herein.

17.4.2 The District may issue a Construction Change Directive in the absence of agreement on the terms of a Change Order.

17.5 Force Account Directives

17.5.1 When work, for which a definite price has not been agreed upon in advance, is to be paid for on a force account basis, all direct costs necessarily incurred and paid by the Contractor for labor, material, and equipment used in the performance of that Work, shall be subject to the approval of the District and compensation will be determined as set forth herein.

17.5.2 The District will issue a Force Account Directive to proceed with the Work on a force account basis, and a not-to-exceed budget will be established by the District.

17.5.3 All requirements regarding direct cost for labor, labor burden, material, equipment, and markups on direct costs for overhead and profit described in this section shall apply to Force Account Directives. However, the District will only pay for actual costs verified in the field by the District or its authorized representative(s) on a daily basis.

17.5.4 The Contractor shall be responsible for all cost related to the administration of Force Account Directive. The markup for overhead and profit for Contractor modifications shall be full compensation to the Contractor to administer Force Account Directive, and Contractor shall not be entitled to separately recover additional amounts for overhead and/or profit.

17.5.5 The Contractor shall notify the District or its authorized representative(s) at least twenty-four (24) hours prior to proceeding with any of the force account work. Furthermore, the Contractor shall notify the District when it has consumed eighty percent (80%) of the budget, and shall not exceed the budget unless specifically authorized in writing by the District. The Contractor will not be compensated for force account work in the event that the Contractor fails to timely notify the District regarding the commencement of force account work, or exceeding the force account budget.

17.5.6 The Contractor shall diligently proceed with the work, and on a daily basis, submit a daily force account report using Document 00 63 47, "Daily Force Account Report," no later than 5:00 p.m. each day. The report shall contain a detailed itemization of the daily labor, material, and equipment used on the force account work only. The names of the individuals performing the force account work shall be included on the daily force account reports. The type and model of equipment shall be identified and listed. The District will review the information contained in the reports, and sign the reports no later than the next work day, and return a copy of the report to the Contractor for their records. The District will not sign, nor will the Contractor receive compensation for work the District cannot verify. The Contractor will provide a weekly force account summary indicating the status of each Force Account Directive in terms of percent complete of the not-to-exceed budget and the estimated percent complete of the work.

17.5.7 In the event the Contractor and the District reach a written agreement on a set cost for the work while the work is proceeding based on a Force Account Directive, the Contractor's signed daily force account reports shall be discontinued and all previously signed reports shall be invalid.

17.6 Price Request

17.6.1 Definition of Price Request

A Price Request is a written request prepared by the Architect requesting the Contractor to submit to the District and the Architect an estimate of the effect of a proposed change in the Work on the Contract Price and the Contract Time.

17.6.2 Scope of Price Request

A Price Request shall contain adequate information, including any necessary Drawings and Specifications, to enable Contractor to provide the cost breakdowns required herein. The Contractor shall not be entitled to any additional compensation for preparing a response to a Price Request, whether ultimately accepted or not.

17.7 Proposed Change Order

17.7.1 Definition of Proposed Change Order

A Proposed Change Order ("PCO") is a written request prepared by the Contractor requesting that the District and the Architect issue a Change Order based upon a proposed change to the Work.

17.7.2 Changes in Contract Price

A PCO shall include breakdowns and backup documentation pursuant to the revisions herein and sufficient, in the District's judgment, to validate any change in Contract Price. In no case shall Contractor or any of its Subcontractors be permitted to reserve rights for additional compensation for Change Order Work.

17.7.3 Changes in Time

A PCO shall also include any changes in time required to complete the Project. Any additional time requested shall not be the number of days to make the proposed change, but must be based upon the impact to the Construction Schedule as defined in the Contract Documents. The Contractor shall justify the proposed change in time by submittal of a schedule analysis that accurately shows the impact of the change on the critical path of the Construction Schedule ("Time Impact Analysis"). If Contractor fails to request a time extension in a PCO, including the Time Impact Analysis, then the Contractor is thereafter precluded from requesting, and waives any right to request, additional time and/or claim a delay. In no case shall Contractor or any of its Subcontractors be permitted to reserve rights for additional time for Change Order Work. A PCO that leaves the amount of time requested blank, or states that such time requested is "to be determined", is not permitted and shall also constitute a waiver of any right to request additional time and/or claim a delay.

17.7.4 Unknown and/or Unforeseen Conditions

If there is an Allowance, then Contractor must submit a Request for Allowance Expenditure Directive, including supporting documentation as described below, to receive authorization for the release of funds from the Allowance. Allowance Expenditure Directives shall be based on Contractor's costs, without overhead and profit, for products, delivery, installation, labor, insurance, payroll, taxes, bonding

and equipment rental will be included in Allowance Expenditure Directive authorizing expenditure of funds from this Allowance. No overhead and profit shall be added to the Allowance Expenditure Directive. If cost of the unforeseen condition(s) exceed the Allowance, Contractor must submit a PCO for amounts in excess of the Allowance requesting an increase in Contract Price and/or Contract Time that is based at least partially on Contractor's assertion that Contractor has encountered unknown and/or unforeseen condition(s) on the Project, then Contractor shall base the PCO on provable information that, beyond a reasonable doubt and to the District's satisfaction, demonstrates that the unknown and/or unforeseen condition(s) were actually unknown and/or unforeseen and that the condition(s) were reasonably unknown and/or unforeseen. If not, the District shall deny the PCO as unsubstantiated, and the Contractor shall complete the Project without any increase in Contract Price and/or Contract Time based on that PCO.

17.7.5 Time to Submit Proposed Change Order

Contractor shall submit its PCO within five (5) working days of the date Contractor discovers, or reasonably should have discovered, the circumstances giving rise to the PCO, unless additional time to submit a PCO is granted in writing by the District. Time is of the essence in Contractor's submission of PCOs so that the District can promptly investigate the basis for the PCO. Accordingly, if Contractor fails to submit its PCO within this timeframe, Contractor waives, releases, and discharges any right to assert or claim any entitlement to an adjustment of the Contract Price and/or Time based on circumstances giving rise to the PCO.

17.7.6 Proposed Change Order Certification

In submitting a PCO, Contractor certifies and affirms that the cost and/or time request is submitted in good faith, that the cost and/or time request is accurate and in accordance with the provisions of the Contract Documents, and the Contractor submits the cost and/or request for extension of time recognizing the significant civil penalties and treble damages which follow from making a false claim or presenting a false claim under Government Code section 12650 et seq.

It is expressly understood that the value of the extra Work or changes expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project including, without limitation, cumulative impacts. Contractor is not entitled to separately recover amounts for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

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17.8 Format for Proposed Change Order

17.8.1 The following format shall be used as applicable by the District and the Contractor (e.g. Change Orders, PCO's) to communicate proposed additions and deductions to the Contract, supported by attached documentation. Any spaces left blank will be deemed no change to cost or time.

	<u>WORK PERFORMED OTHER THAN BY CONTRACTOR</u>	<u>ADD</u>	<u>DEDUCT</u>
(a)	<u>Material</u> (attach suppliers' invoice or itemized quantity and unit cost plus sales tax)		
(b)	<u>Add Labor</u> (attach itemized hours and rates, fully Burdened, and specify the hourly rate for each additional labor burden, for example, payroll taxes, fringe benefits, etc.)		
(c)	<u>Add Equipment</u> (attach suppliers' invoice)		
(d)	<u>Subtotal</u>		
(e)	<u>Add Overhead and Profit for any and all tiers of Subcontractor</u> , the total not to exceed ten percent (10%) of Item (d)		
(f)	<u>Subtotal</u>		
(g)	<u>Add General Conditions Cost</u> (if Time is Compensable) (attach supporting documentation)		
(h)	<u>Subtotal</u>		
(i)	<u>Add Overhead and Profit for Contractor</u> , not to exceed five percent (5%) of Item (h)		
(j)	<u>Subtotal</u>		
(k)	<u>Add Bond and Insurance</u> , not to exceed two percent (2%) of Item (j)		
(l)	<u>TOTAL</u>		
(m)	<u>Time</u> (zero unless indicated; "TBD" not permitted)	_____ Calendar Days	

	<u>WORK PERFORMED BY CONTRACTOR</u>	<u>ADD</u>	<u>DEDUCT</u>
(n)	<u>Material</u> (attach itemized quantity and unit cost plus sales tax)		
(o)	<u>Add Labor</u> (attach itemized hours and rates, fully Burdened, and specify the hourly rate for each additional labor burden, for example, payroll taxes, fringe benefits, etc.)		
(p)	<u>Add Equipment</u> (attach suppliers' invoice)		
(q)	<u>Add General Conditions Cost</u> (if Time is Compensable) (attach supporting documentation)		
(r)	<u>Subtotal</u>		
(s)	<u>Add Overhead and Profit for Contractor</u> , not to exceed fifteen percent (15%) of Item (e)		
(t)	<u>Subtotal</u>		
(u)	<u>TOTAL</u>		
(v)	<u>Time</u> (zero unless indicated; "TBD" not permitted)	_____ Calendar Days	

17.8.2 Labor.

Contractor shall be compensated for the costs of labor actually and directly utilized in the performance of the Work. Such labor costs shall be the actual cost, use of any formulas (e.g. labor factors) is not allowed, not to exceed prevailing wage rates in the locality of the Site and shall be in the labor classification(s) necessary for the performance of the Work, fully Burdened. Labor costs shall exclude costs incurred by the Contractor in preparing estimate(s) of the costs of the change in the Work, in the maintenance of records relating to the costs of the change in the Work, coordination and assembly of materials and information relating to the change in the Work or performance thereof, or the supervision and other overhead and general conditions costs associated with the change in the Work or performance thereof, including but not limited to the cost for the job superintendent. If applicable, District will pay Contractor the reasonable costs for room and board, supported with appropriate backup documentation, without markup for profit or overhead as provided by U.S. General Services Administration per diem rates for California lodging, meals and incidentals, <https://www.gsa.gov/travel/plan-book/per-diem-rates/per-diem-rates-lookup>.

17.8.3 Materials.

Contractor shall be compensated for the costs of materials necessarily and actually used or consumed in connection with the performance of the change in the Work. Costs of materials may include reasonable costs of transportation from a source closest to the Site of the Work and delivery to the Site. If discounts by material suppliers are available for materials necessarily used in the performance of the change in the Work, they shall be credited to the District. If materials necessarily used in the performance of the change in the Work are obtained from a supplier or source owned in whole or in part by the Contractor, compensation therefor shall not exceed the current wholesale price for such materials. If, in the reasonable opinion of the District, the costs asserted by the Contractor for materials in connection with any change in the Work are excessive, or if the Contractor fails to provide satisfactory evidence of the actual costs of such materials from its supplier or vendor of the same, the costs of such materials and the District's obligation to pay for the same shall be limited to the then lowest wholesale price at which similar materials are available in the quantities required to perform the change in the Work. The District may elect to furnish materials for the change in the Work, in which event the Contractor shall not be compensated for the costs of furnishing such materials or any mark-up thereon.

17.8.4 Equipment.

As a precondition to the District's duty to pay for Equipment rental or loading and transportation, Contractor shall provide satisfactory evidence of the actual costs of Equipment from the supplier, vendor or rental agency of same. Contractor shall be compensated for the actual cost of the necessary and direct use of Equipment in the performance of the change in the Work. Use of such Equipment in the performance of the change in the Work shall be compensated in increments of fifteen (15) minutes. Rental time for Equipment moved by its own power shall include time required to move such Equipment to the site of the Work from the nearest available rental source of the same. If Equipment is not moved to the Site by its own power, Contractor will be compensated for the loading and transportation costs in lieu of rental time. The foregoing notwithstanding, neither moving time or loading and

transportation time shall be allowed if the Equipment is used for performance of any portion of the Work other than the change in the Work. Unless prior approval in writing is obtained by the Contractor from the Architect, the Project Inspector and the District, no costs or compensation shall be allowed for time while Construction Equipment is inoperative, idle or on standby, for any reason. Contractor shall not be entitled to an allowance or any other compensation for Equipment or tools used in the performance of change in the Work where such Equipment or tools have a replacement value of \$500.00 or less. Equipment costs claimed by the Contractor in connection with the performance of any Work shall not exceed rental rates established by distributors or construction equipment rental agencies in the locality of the Site; any costs asserted which exceed such rental rates shall not be allowed or paid. Unless otherwise specifically approved in writing by the Architect, the Project Inspector and the District, the allowable rate for the use of Equipment in connection with the Work shall constitute full compensation to the Contractor for the cost of rental, fuel, power, oil, lubrication, supplies, necessary attachments, repairs or maintenance of any kind, depreciation, storage, insurance, labor (exclusive of labor costs of the Equipment operator), and any and all other costs incurred by the Contractor incidental to the use of such Equipment.

17.8.5 General Conditions Cost.

The phrase "General Conditions Cost" shall mean, other than expressly limited or excluded herein, the costs of Contractor during the construction phase, including but not limited to: payroll costs for project manager for Work conducted at the Site, payroll costs for the superintendent and full-time general foremen, workers not included as direct labor costs engaged in support functions (e.g., loading/unloading, clean-up), costs of offices and temporary facilities including office materials, office supplies, office equipment, minor expenses, utilities, fuel, sanitary facilities and telephone services at the Site, costs of consultants not in the direct employ of Contractor or Subcontractors, and fees for permits and licenses.

17.8.6 Overhead and Profit.

The phrase "Overhead and Profit" shall include field and office supervisors and assistants, watchperson, use of small tools, consumable, insurance other than construction bonds and insurance required herein, general conditions costs and home office expenses.

17.9 Change Order Certification

17.9.1 All Change Orders and PCOs include the following certification by the Contractor, either in the form specifically or incorporated by this reference:

17.9.1.1 The undersigned Contractor approves the foregoing as to the changes, if any, to the Contract Price specified for each item, and as to the extension of time allowed, if any, for completion of the entire Work as stated herein, and agrees to furnish all labor, materials, and service, and perform all work necessary to complete any additional work specified for the consideration stated herein. Submission of sums which have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act set forth under Government Code section 12650 et seq. It is understood that the changes herein to the Contract shall only be effective when approved by the governing board of the District.

17.9.1.2 It is expressly understood that the value of the extra Work or changes expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project including, without limitation, cumulative impacts. Contractor is not entitled to separately recover amounts for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

17.9.2 Accord and Satisfaction: Contractor's execution of any Change Order shall constitute a full accord and satisfaction, and release, of all Contractor (and if applicable, Subcontractor) claims for additional time, money or other relief arising from or relating to the subject matter of the change including, without limitation, impacts of all types, cumulative impacts, inefficiency, overtime, delay and any other type of claim.

17.10 Determination of Change Order Cost

17.10.1 The amount of the increase or decrease in the Contract Price from a Change Order, if any, shall be determined in one or more of the following ways as applicable to a specific situation and at the District's discretion:

17.10.1.1 District acceptance of a PCO;

17.10.1.2 By unit prices contained in Contractor's original bid;

17.10.1.3 By agreement between District and Contractor.

17.11 Deductive Change Orders

All deductive Change Order(s) must be prepared pursuant to the provisions herein. Where a portion of the Work is deleted from the Contract, the reasonable value of the deducted work less the value of work performed shall be considered the appropriate deduction. The value submitted on the Schedule of Values shall be used to calculate the credit amount unless the bid documentation is being held in escrow as part of the Contract Documents. Unit Prices, if any, may be used in District's discretion in calculating reasonable value. If Contractor offers a proposed amount for a deductive Change Order(s), Contractor shall include a minimum of five percent (5%) total profit and overhead to be deducted with the amount of the work of the Change Order(s). If Subcontractor work is involved, Subcontractors shall also include a minimum of five percent (5%) profit and overhead to be deducted with the amount of its deducted work. Any deviation from this provision shall not be allowed.

17.12 Addition or Deletion of Alternate Bid Item(s)

If the Bid Form and Proposal includes proposal(s) for Alternate Bid Item(s), during Contractor's performance of the Work, the District may elect to add or delete any such Alternate Bid Item(s) if not included in the Contract at the time of award. If the District elects to add or delete Alternate Bid Item(s) after Contract award, the cost or credit for such Alternate Bid Item(s) shall be as set forth in the Bid Form and Proposal unless the parties agree to a different price and the Contract Time shall be adjusted by the number of days allocated in the Contract Documents. If days are not allocated in the Contract Documents, the Contract Time shall be equitably adjusted.

17.13 Discounts, Rebates, and Refunds

For purposes of determining the cost, if any, of any change, addition, or omission to the Work hereunder, all trade discounts, rebates, refunds, and all returns from the sale of surplus materials and equipment shall accrue and be credited to the Contractor, and the Contractor shall make provisions so that such discounts, rebates, refunds, and returns may be secured, and the amount thereof shall be allowed as a reduction of the Contractor's cost in determining the actual cost of construction for purposes of any change, addition, or omission in the Work as provided herein.

17.14 Accounting Records

With respect to portions of the Work performed by Change Orders and Construction Change Directives, the Contractor shall keep and maintain cost-accounting records satisfactory to the District, including, without limitation, Job Cost Reports as provided in these General Conditions, which shall be available to the District on the same terms as any other books and records the Contractor is required to maintain under the Contract Documents. Such records shall include without limitation hourly records for Labor and Equipment and itemized records of materials and Equipment used that day in connection with the performance of any Work. All records maintained hereunder shall be subject to inspection, review and/or reproduction by the District, the Architect or the Project Inspector upon request. In the event that the Contractor fails or refuses, for any reason, to maintain or make available for inspection, review and/or reproduction such records, the District's reasonable good faith determination of the extent of adjustment to the Contract Price shall be final, conclusive, dispositive and binding upon Contractor.

17.15 Notice Required

If the Contractor desires to make a claim for an increase in the Contract Price, or any extension in the Contract Time for completion, it shall notify the District pursuant to the provisions herein, including the Article on Claims and Disputes. No claim shall be considered unless made in accordance with this subparagraph. Contractor shall proceed to execute the Work even though the adjustment may not have been agreed upon. Any change in the Contract Price or extension of the Contract Time resulting from such claim shall be authorized by a Change Order.

17.16 Applicability to Subcontractors

Any requirements under this Article shall be equally applicable to Change Orders or Construction Change Directives issued to Subcontractors by the Contractor to the extent as required by the Contract Documents.

17.17 Alteration to Change Order Language

Contractor shall not alter Change Orders or reserve time in Change Orders. Change Orders altered in violation of this provision, if in conflict with the terms set forth herein, shall be construed in accordance with the terms set forth herein. Contractor shall execute finalized Change Orders and proceed under the provisions herein with proper notice.

17.18 Failure of Contractor to Execute Change Order

Contractor shall be in default of the Contract if Contractor fails to execute a Change Order when the Contractor agrees with the addition and/or deletion of the Work in that Change Order.

18. REQUEST FOR INFORMATION

18.1 Any Request for Information shall reference all applicable Contract Document(s), including Specification section(s), detail(s), page number(s), drawing number(s), and sheet number(s), etc. The Contractor shall make suggestions and interpretations of the issue raised by each Request for Information. A Request for Information cannot modify the Contract Price, Contract Time, or the Contract Documents. Upon request by the District, Contractor shall provide an electronic copy of the Request for Information in addition to the hard copy.

18.2 The Contractor shall be responsible for any costs incurred for professional services that District may deduct from any amounts owing to the Contractor, if a Request for Information requests an interpretation or decision of a matter where the information sought is equally available to the party making the request. District, at its sole discretion, shall deduct from and/or invoice Contractor for all the professional services arising herein.

19. PAYMENTS

19.1 Contract Price

The Contract Price is stated in the Agreement and, including authorized adjustments, is the total amount payable by the District to the Contractor for performance of the Work under the Contract Documents.

19.2 Applications for Progress Payments

19.2.1 Procedure for Applications for Progress Payments

19.2.1.1 Application for Progress Payment

19.2.1.1.1 Not before the fifth (5th) day of each calendar month during the progress of the Work, Contractor shall submit to the District and the Architect an itemized Application for Payment for operations completed in accordance with the Schedule of Values. Such application shall be notarized, if required, and supported by the following or each portion thereof unless waived by the District in writing:

19.2.1.1.1.1 The amount paid to the date of the Application to the Contractor, to all its Subcontractors, and all others furnishing labor, material, or equipment for its Contract;

19.2.1.1.1.2 The amount being requested under the Application for Payment by the Contractor on its own behalf and separately stating the amount requested on behalf of each of the Subcontractors and all others furnishing labor, material, and equipment under the Contract;

- 19.2.1.1.1.3 The balance that will be due to each of such entities after said payment is made;
- 19.2.1.1.1.4 A certification that the As-Built Drawings and annotated Specifications are current;
- 19.2.1.1.1.5 Itemized breakdown of work done for the purpose of requesting partial payment;
- 19.2.1.1.1.6 An updated and acceptable construction schedule in conformance with the provisions herein;
- 19.2.1.1.1.7 The additions to and subtractions from the Contract Price and Contract Time;
- 19.2.1.1.1.8 A total of the retentions held;
- 19.2.1.1.1.9 Material invoices, evidence of equipment purchases, rentals, and other support and details of cost as the District may require from time to time;
- 19.2.1.1.1.10 The percentage of completion of the Contractor's Work by line item;
- 19.2.1.1.1.11 Schedule of Values updated from the preceding Application for Payment;
- 19.2.1.1.1.12 A duly completed and executed conditional waiver and release upon progress payment compliant with Civil Code section 8132 from the Contractor and each subcontractor of any tier and supplier to be paid from the current progress payment;
- 19.2.1.1.1.13 A duly completed and executed unconditional waiver and release upon progress payment compliant with Civil Code section 8134 from the Contractor and each subcontractor of any tier and supplier that was paid from the previous progress payment(s); and

19.2.1.1.1.14 A certification by the Contractor of the following:

The Contractor warrants title to all Work performed as of the date of this payment application has been completed in accordance with the Contract Documents for the Project. The Contractor further warrants that all amounts have been paid for work which previous Certificates for Payment were issued and payments received and all Work performed as of the date of this payment application is free and clear of liens, claims, security interests, or encumbrances in favor of the Contractor, Subcontractors, material and equipment suppliers, workers, or other persons or entities making a claim by reason of having provided labor, materials, and equipment relating to the Work, except those of which the District has been informed. Submission of sums which have no basis in fact or which Contractor knows are false are at the sole risk of Contractor and may be a violation of the False Claims Act set forth under Government Code section 12650 et seq.

19.2.1.1.1.15 The Contractor shall be subject to the False Claims Act set forth in Government Code section 12650 et seq. for information provided with any Application for Progress Payment.

19.2.1.1.1.16 All remaining certified payroll records ("CPR(s)") for each journeyman, apprentice, worker, or other employee employed by the Contractor and/or each Subcontractor in connection with the Work for the period of the Application for Payment. As indicated herein, the District shall not make any payment to Contractor until:

19.2.1.1.1.16.1 Contractor and/or its Subcontractor(s) provide electronic CPRs directly to the DIR on no less than every 30 days while Work is being performed and within 30 days after the final day of Work performed on the Project for any journeyman, apprentice, worker or other employee was employed in connection with the Work, or within ten (10) days of any request by the District or the DIR to the requesting entity, and

19.2.1.1.1.16.2 Any delay in Contractor and/or its Subcontractor(s) providing CPRs in a timely manner may directly delay the Contractor's payment.

19.2.1.1.2 Applications received after June 20th will not be paid until the second week of July and applications received after December 12th will not be paid until the first week of January.

19.2.2 Prerequisites for Progress Payments

19.2.2.1 First Payment Request: The following items, if applicable, must be completed before the District will accept and/or process the Contractor's first payment request:

19.2.2.1.1 Installation of the Project sign;

19.2.2.1.2 Installation of field office;

- 19.2.2.1.3 Installation of temporary facilities and fencing;
- 19.2.2.1.4 Schedule of Values;
- 19.2.2.1.5 Contractor's Construction Schedule;
- 19.2.2.1.6 Schedule of unit prices, if applicable;
- 19.2.2.1.7 Submittal Schedule;
- 19.2.2.1.8 Receipt by Architect of all submittals due as of the date of the payment application;
- 19.2.2.1.9 Copies of necessary permits;
- 19.2.2.1.10 Copies of authorizations and licenses from governing authorities;
- 19.2.2.1.11 Initial progress report;
- 19.2.2.1.12 Surveyor qualifications;
- 19.2.2.1.13 Written acceptance of District's survey of rough grading, if applicable;
- 19.2.2.1.14 List of all Subcontractors, with names, license numbers, telephone numbers, and Scope of Work;
- 19.2.2.1.15 All bonds and insurance endorsements; and
- 19.2.2.1.16 Resumes of Contractor's project manager, and if applicable, job site secretary, record documents recorder, and job site superintendent.

19.2.2.2 Second Payment Request:

The District will not process the second payment request until and unless all submittals and Shop Drawings have been accepted for review by the Architect.

19.2.2.3 No Waiver of Criteria:

Any payments made to Contractor where criteria set forth herein have not been met shall not constitute a waiver of said criteria by District. Instead, such payment shall be construed as a good faith effort by District to resolve differences so Contractor may pay its Subcontractors and suppliers. Contractor agrees that failure to submit such items may constitute a breach of contract by Contractor and may subject Contractor to termination.

19.3 Progress Payments

19.3.1 District's Approval of Application for Payment

19.3.1.1 Upon receipt of an Application for Payment, The District shall act in accordance with both of the following:

19.3.1.1.1 Each Application for Payment shall be reviewed by the District as soon as practicable after receipt for the purpose of determining that the Application for Payment is a proper Application for Payment.

19.3.1.1.2 Any Application for Payment determined not to be a proper Application for Payment suitable for payment shall be returned to the Contractor as soon as practicable, but not later than seven (7) days, after receipt. An Application for Payment returned pursuant to this paragraph shall be accompanied by a document setting forth in writing the reasons why the Application for Payment is not proper. The number of days available to the District to make a payment without incurring interest pursuant to this section shall be reduced by the number of days by which the District exceeds this seven-day return requirement.

19.3.1.1.3 An Application for Payment shall be considered properly executed if funds are available for payment of the Application for Payment, and payment is not delayed due to an audit inquiry by the financial officer of the District.

19.3.1.2 The District's review of the Contractor's Application for Payment will be based on the District's and the Architect's observations at the Site and the data comprising the Application for Payment that the Work has progressed to the point indicated and that, to the best of the District's and the Architect's knowledge, information, and belief, the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to:

19.3.1.2.1 Observation of the Work for general conformance with the Contract Documents,

19.3.1.2.2 Results of subsequent tests and inspections,

19.3.1.2.3 Minor deviations from the Contract Documents correctable prior to completion, and

19.3.1.2.4 Specific qualifications expressed by the Architect.

19.3.1.3 District's approval of the certified Application for Payment shall be based on Contractor complying with all requirements for a fully complete and valid certified Application for Payment.

19.3.2 Payments to Contractor

19.3.2.1 Within thirty (30) days after approval of the Application for Payment, Contractor shall be paid a sum equal to ninety-five percent (95%) of the value of the Work performed (as verified by Architect and Inspector and certified by Contractor) up to the last day of the previous month, less the aggregate of previous payments and amount to be withheld. The value of the Work completed shall be Contractor's best estimate. No inaccuracy or error in said estimate shall operate to release the Contractor, or any Surety upon any bond, from damages arising from such Work, or from the District's right to enforce each and every

provision of this Contract, and the District shall have the right subsequently to correct any error made in any estimate for payment.

19.3.2.2 The Contractor shall not be entitled to have any payment requests processed, or be entitled to have any payment made for Work performed, so long as any lawful or proper direction given by the District concerning the Work, or any portion thereof, remains incomplete.

19.3.2.3 If the District fails to make any progress payment within thirty (30) days after receipt of an undisputed and properly submitted Application for Payment from the Contractor, the District shall pay interest to the Contractor equivalent to the legal rate set forth in subdivision (a) of Section 685.010 of the Code of Civil Procedure.

19.3.3 No Waiver

No payment by District hereunder shall be interpreted so as to imply that District has inspected, approved, or accepted any part of the Work. Notwithstanding any payment, the District may enforce each and every provision of this Contract. The District may correct or require correction of any error subsequent to any payment.

19.4 Decisions to Withhold Payment

19.4.1 Reasons to Withhold Payment

The District may withhold payment in whole, or in part, to the extent reasonably necessary to protect the District if, in the District's opinion, the representations to the District required herein cannot be made. The District may withhold payment, in whole, or in part, to such extent as may be necessary to protect the District from loss because of, but not limited to any of the following:

19.4.1.1 Defective Work not remedied within **FORTY-EIGHT (48)** hours of written notice to Contractor.

19.4.1.2 Stop Payment Notices or other liens served upon the District as a result of the Contract. Contractor agrees that the District may withhold up to 125% of the amount claimed in the Stop Payment Notice to answer the claim and to provide for the District's reasonable cost of any litigation pursuant to the stop payment notice.

19.4.1.3 Written notice to withhold payment from Contractor by payment and/or performance bond surety(ies).

19.4.1.4 Liquidated damages assessed against the Contractor.

19.4.1.5 The cost of completion of the Contract if there exists a reasonable doubt that the Work can be completed for the unpaid balance of the Contract Price or by the completion date.

19.4.1.6 Damage to the District or other contractor(s).

19.4.1.7 Unsatisfactory prosecution of the Work by the Contractor.

19.4.1.8 Failure to store and properly secure materials.

19.4.1.9 Failure of the Contractor to submit, on a timely basis, proper, sufficient, and acceptable documentation required by the Contract Documents, including, without limitation, a Construction Schedule, Schedule of Submittals, Schedule of Values, Monthly Progress Schedules, Shop Drawings, Product Data and samples, Proposed product lists, executed Change Orders, and/or verified reports.

19.4.1.10 Failure of the Contractor to maintain As-Built Drawings.

19.4.1.11 Erroneous estimates by the Contractor of the value of the Work performed, or other false statements in an Application for Payment.

19.4.1.12 Unauthorized deviations from the Contract Documents.

19.4.1.13 Failure of the Contractor to prosecute the Work in a timely manner in compliance with the Construction Schedule, established progress schedules, and/or completion dates.

19.4.1.14 Failure to provide acceptable electronic certified payroll records, as required by the Labor Code, by these Contract Documents, or by written request; for each journeyman, apprentice, worker, or other employee employed by the Contractor and/or by each Subcontractor in connection with the Work for the period of the Application for Payment or if payroll records are delinquent or inadequate.

19.4.1.15 Failure to properly pay prevailing wages as required in Labor Code section 1720 et seq., failure to comply with any other Labor Code requirements, and/or failure to comply with labor compliance monitoring and enforcement by the DIR.

19.4.1.16 Allowing an unregistered subcontractor, as described in Labor Code section 1725.5, to engage in the performance of any work under this Contract.

19.4.1.17 Failure to comply with any applicable federal statutes and regulations regarding minimum wages, withholding, payrolls and basic records, apprentice and trainee employment requirements, equal employment opportunity requirements, Copeland Act requirements, Davis-Bacon Act and related requirements, Contract Work Hours and Safety Standards Act requirements, if applicable.

19.4.1.18 Failure to properly maintain or clean up the Site.

19.4.1.19 Failure to timely indemnify, defend, or hold harmless the District.

19.4.1.20 Any payments due to the District, including but not limited to payments for failed tests, utilities changes, or permits.

19.4.1.21 Failure to pay Subcontractor(s) or supplier(s) as required by law and by the Contract Documents.

19.4.1.22 Failure to pay any royalty, license or similar fees.

19.4.1.23 Contractor is otherwise in breach, default, or in substantial violation of any provision of this Contract.

19.4.1.24 Failure to perform any implementation and/or monitoring required by any SWPPP for the Project and/or the imposition of any penalties or fines therefore whether imposed on the District or Contractor.

19.4.2 Reallocation of Withheld Amounts

19.4.2.1 District may, in its discretion, apply any withheld amount to pay outstanding claims or obligations as defined herein. In so doing, District shall make such payments on behalf of Contractor. If any payment is so made by District, then that amount shall be considered a payment made under Contract by District to Contractor and District shall not be liable to Contractor for any payment made in good faith. These payments may be made without prior judicial determination of claim or obligation. District will render Contractor an accounting of funds disbursed on behalf of Contractor.

19.4.2.2 If Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents or fails to perform any provision thereof, District may, after **FORTY-EIGHT (48)** hours' written notice to the Contractor and, without prejudice to any other remedy, make good such deficiencies. The District shall adjust the total Contract Price by reducing the amount thereof by the cost of making good such deficiencies. If District deems it inexpedient to correct Work that is damaged, defective, or not done in accordance with Contract provisions, an equitable reduction in the Contract Price (of at least one hundred fifty percent (150%) of the estimated reasonable value of the nonconforming Work) shall be made therefor.

19.4.3 Payment After Cure

When Contractor removes the grounds for declining approval, payment shall be made for amounts withheld because of them. No interest shall be paid on any retainage or amounts withheld due to the failure of the Contractor to perform in accordance with the terms and conditions of the Contract Documents.

19.5 Subcontractor Payments

19.5.1 Payments to Subcontractors

No later than seven (7) days after receipt, or pursuant to Business and Professions Code section 7108.5 and Public Contract Code section 7107, the Contractor shall pay to each Subcontractor, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to its Sub-subcontractors in a similar manner.

19.5.2 No Obligation of District for Subcontractor Payment

The District shall have no obligation to pay, or to see to the payment of, money to a Subcontractor except as may otherwise be required by law.

19.5.3 Joint Checks

District shall have the right in its sole discretion, if necessary for the protection of the District, to issue joint checks made payable to the Contractor and Subcontractors and/or material or equipment suppliers. The joint check payees shall be responsible for the allocation and disbursement of funds included as part of any such joint payment. In no event shall any joint check payment be construed to create any contract between the District and a Subcontractor of any tier, or a material or equipment supplier, any obligation from the District to such Subcontractor or a material or equipment supplier, or rights in such Subcontractor or a material or equipment supplier against the District.

20. COMPLETION OF THE WORK

20.1 Completion

20.1.1 District will accept completion of Contract and have the Notice of Completion recorded when the entire Work shall have been completed to the satisfaction of District.

20.1.2 The Work may only be accepted as complete by action of the governing board of the District.

20.1.3 District, at its sole option, may accept completion of Contract and have the Notice of Completion recorded when the entire Work shall have been completed to the satisfaction of District, except for minor corrective items, as distinguished from incomplete items. If Contractor fails to complete all minor corrective items within fifteen (15) days after the date of the District's acceptance of completion, District shall withhold from the final payment one hundred fifty percent (150%) of an estimate of the amount sufficient to complete the corrective items, as determined by District, until the item(s) are completed.

20.1.4 At the end of the 15-day period, if there are any items remaining to be corrected, District may elect to proceed as provided herein related to adjustments to Contract Price, and/or District's right to perform the Work of the Contractor.

20.2 Close-Out/Certification Procedures

20.2.1 Punch List

The Contractor shall notify the Architect when Contractor considers the Work complete. Upon notification, Architect will prepare a list of minor items to be completed or corrected ("Punch List"). The Contractor and/or its Subcontractors shall proceed promptly to complete and correct items on the Punch List. Failure to include an item on Punch List does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

20.2.2 Close-Out/Certification Requirements

20.2.2.1 Utility Connections

Buildings shall be connected to water, gas, sewer, and electric services, complete and ready for use. Service connections shall be made and existing services reconnected.

20.2.2.2 Record Drawings and Record Specifications

20.2.2.2.1 Contractor shall provide exact Record Drawings of the Work ("As-Builts") and Record Specifications upon completion of the Project and as a condition precedent to approval of final payment.

20.2.2.2.2 Contractor shall obtain the Inspector's approval of the corrected prints and employ a competent draftsman to transfer the Record Drawings information to the most current version of AutoCAD that is, at that time, currently utilized for plan check submission by either the District, the Architect, OPSC, and/or DSA, and print a complete set of transparent sepias. When completed, Contractor shall deliver corrected sepias and diskette/CD/other data storage device acceptable to District with AutoCAD file to the District.

20.2.2.2.3 Contractor is liable and responsible for any and all inaccuracies in the Record Drawings and Record Specifications, even if inaccuracies become evident at a future date.

20.2.2.3 Construction Storm Water Permit, if applicable

Contractor shall submit to District all electronic or hard copy records required by the Construction Storm Water Permit, if applicable, within seven (7) days of Completion of the Project.

20.2.2.4 Maintenance Manuals: Contractor shall prepare all operation and maintenance manuals and date as indicated in the Specifications.

20.2.2.5 Source Programming: Contractor shall provide all source programming for all items in the Project.

20.2.2.6 Verified Reports: Contractor shall completely and accurately fill out and file forms DSA 6-C or DSA 152 (or current form), as appropriate. Refer to section 4-336 and section 4-343 of Part 1, Title 24 of the California Code of Regulations.

20.3 Final Inspection

20.3.1 Contractor shall comply with Punch List procedures as provided herein, and maintain the presence of a Project Superintendent and Project Manager until the Punch List is complete to ensure proper and timely completion of the Punch List. Under no circumstances shall Contractor demobilize its forces prior to completion of the Punch List without District's prior written approval. Upon receipt of Contractor's written notice that all of the Punch List items have been fully completed and the Work is ready for final inspection and District acceptance, Architect and Project Inspector will inspect the Work and shall submit to Contractor and District a final inspection report noting the Work, if any, required in order to complete in accordance with the Contract Documents. Absent unusual circumstances, this report shall consist of the Punch List items not yet satisfactorily completed.

20.3.2 Upon Contractor's completion of all items on the Punch List and any other uncompleted portions of the Work, the Contractor shall notify the District and Architect, who shall again inspect such Work. If the Architect finds the Work complete and acceptable under the Contract Documents, the Architect will notify Contractor, who shall then jointly submit to the Architect and the District its final Application for Payment.

20.3.3 Final Inspection Requirements

20.3.3.1 Before calling for final inspection, Contractor shall determine that the following have been performed:

- 20.3.3.1.1 The Work has been completed.
- 20.3.3.1.2 All life safety items are completed and in working order.
- 20.3.3.1.3 Mechanical and electrical Work including, without limitation, security system, data, and fire alarm, are complete and tested, fixtures are in place, connected, and ready for tryout.
- 20.3.3.1.4 Electrical circuits scheduled in panels and disconnect switches labeled.
- 20.3.3.1.5 Painting and special finishes complete.
- 20.3.3.1.6 Doors complete with hardware, cleaned of protective film, relieved of sticking or binding, and in working order.
- 20.3.3.1.7 Tops and bottoms of doors sealed.
- 20.3.3.1.8 Floors waxed and polished as specified.
- 20.3.3.1.9 Broken glass replaced and glass cleaned.
- 20.3.3.1.10 Grounds cleared of Contractor's equipment, raked clean of debris, and trash removed from Site.
- 20.3.3.1.11 Work cleaned, free of stains, scratches, and other foreign matter, and damaged and broken material replaced.
- 20.3.3.1.12 Finished and decorative work shall have marks, dirt, and superfluous labels removed.
- 20.3.3.1.13 Final cleanup, as provided herein.

20.4 Costs of Multiple Inspections

More than two (2) requests of the District to make a final inspection shall be considered an additional service of District, Architect, Construction Manager, and/or Project Inspector, and all subsequent costs will be invoiced to Contractor and if funds are available, withheld from remaining payments.

20.5 Partial Occupancy or Use Prior to Completion

20.5.1 District's Rights to Occupancy

The District may occupy or use any completed or partially completed portion of the Work at any stage, and such occupancy shall not constitute the District's Final Acceptance of any part of the Work. Neither the District's Final Acceptance, the making of Final Payment, any provision in Contract Documents, nor the use or occupancy of the Work, in whole or in part, by District shall constitute acceptance of Work not in accordance with the Contract Documents nor relieve the Contractor or the Contractor's Performance Bond Surety from liability with respect to any warranties or responsibility for faulty or defective Work or materials, equipment and workmanship incorporated therein. In the event that the District occupies or uses any completed or partially completed portion of the Work, the Contractor shall remain responsible for payments, security, maintenance, heat, utilities, damage to the Work, insurance, the period for correction of the Work, and the commencement of warranties required by the Contract Documents unless the Contractor requests in writing, and the District agrees, to otherwise divide those responsibilities. Any dispute as to responsibilities shall be resolved pursuant to the Claims and Disputes provisions herein, with the added provision that during the dispute process, the District shall have the right to occupy or use any portion of the Work that it needs or desires to use.

20.5.2 Inspection Prior to Occupancy or Use

Immediately prior to partial occupancy or use, the District, the Contractor, and the Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

20.5.3 No Waiver

Unless otherwise agreed upon, partial or entire occupancy or use of a portion or portions of the Work shall not constitute beneficial occupancy or District's acceptance of the Work not complying with the requirements of the Contract Documents.

21. FINAL PAYMENT AND RETENTION

21.1 Final Payment

Upon receipt and approval of a valid and final Application for Payment, the Architect will issue a final Certificate of Payment. The District shall thereupon jointly inspect the Work and either accept the Work as complete or notify the Architect and the Contractor in writing of reasons why the Work is not complete. Upon District's acceptance of the Work of the Contractor as fully complete by the Governing Board of the District (that, absent unusual circumstances, will occur when the Punch List items have been satisfactorily completed), the District shall record a Notice of Completion with the County Recorder, and the Contractor shall, upon receipt of final payment from the District, pay the amount due Subcontractors.

21.2 Prerequisites for Final Payment

The following conditions must be fulfilled prior to Final Payment:

21.2.1 A full release of all Stop Payment Notices served in connection with the Work shall be submitted by Contractor.

21.2.2 A duly completed and executed conditional waiver and release upon final payment compliant with Civil Code section 8136, from the Contractor and each subcontractor of any tier and supplier to be paid from the final payment.

21.2.3 A duly completed and executed unconditional waiver and release upon progress payment compliant with Civil Code section 8134, from the Contractor and each subcontractor of any tier and supplier that was paid from the previous progress payments.

21.2.4 A duly completed and executed Document 00 65 19.26, "AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS" from the Contractor.

21.2.5 The Contractor shall have made all corrections to the Work that are required to remedy any defects therein, to obtain compliance with the Contract Documents or any requirements of applicable codes and ordinances, or to fulfill any of the orders or directions of District required under the Contract Documents.

21.2.6 Each Subcontractor shall have delivered to the Contractor all written guarantees, warranties, applications, and bonds required by the Contract Documents for its portion of the Work.

21.2.7 Contractor must have completed all requirements set forth under "Close-Out/Certification Procedures," including, without limitation, submission of an approved set of complete Record Drawings.

21.2.8 Architect shall have issued its written approval that final payment can be made.

21.2.9 The Contractor shall have delivered to the District all manuals and materials required by the Contract Documents, which must be approved by the District.

21.2.10 The Contractor shall have completed final clean-up as provided herein.

21.3 Retention

21.3.1 The retention, less any amounts disputed by the District or that the District has the right to withhold pursuant to provisions herein, shall be paid:

21.3.1.1 After approval by the Architect of the Application and Certificate of Payment,

21.3.1.2 After the satisfaction of the conditions set forth herein, and

21.3.1.3 After forty-five (45) days after the recording of the Notice of Completion by District.

21.3.2 No interest shall be paid on any retention, or on any amounts withheld due to a failure of the Contractor to perform, in accordance with the terms and conditions of the Contract Documents, except as provided to the contrary in any Escrow Agreement between the District and the Contractor pursuant to Public Contract Code section 22300.

21.4 Substitution of Securities

The District will permit the substitution of securities in accordance with the provisions of Public Contract Code section 22300.

22. UNCOVERING OF WORK

If a portion of the Work is covered without Inspector or Architect approval or not in compliance with the Contract Documents, it must, if required in writing by the District, the Project Inspector, or the Architect, be uncovered for the Project Inspector's or the Architect's observation and be corrected, replaced, and/or recovered at the Contractor's expense without change in the Contract Price or Contract Time.

23. NONCONFORMING WORK AND CORRECTION OF WORK

23.1 Nonconforming Work

23.1.1 Contractor shall promptly remove from Premises all Work identified by District as failing to conform to the Contract Documents whether incorporated or not. Contractor shall promptly replace and re-execute its own Work to comply with the Contract Documents without additional expense to the District and shall bear the expense of making good all work of other contractors destroyed or damaged by any removal or replacement pursuant hereto and/or any delays to the District or other Contractors caused thereby.

23.1.2 If Contractor does not remove Work that District has identified as failing to conform to the Contract Documents within a reasonable time, not to exceed **FORTY-EIGHT (48)** hours, District may remove it and may store any material at Contractor's expense. If Contractor does not pay expense(s) of that removal within ten (10) days' time thereafter, District may, upon ten (10) days' written notice, sell any material at auction or at private sale and shall deduct all costs and expenses incurred by the District and/or District may withhold those amounts from payment(s) to Contractor.

23.2 Correction of Work

23.2.1 Correction of Rejected Work

Pursuant to the notice provisions herein, the Contractor shall immediately correct the Work rejected by the District, the Architect, or the Project Inspector as failing to conform to the requirements of the Contract Documents, whether observed before or after Completion and whether or not fabricated, installed, or completed. The Contractor shall bear costs of correcting the rejected Work, including additional testing, inspections, and compensation for the Inspector's or the Architect's services and expenses made necessary thereby.

23.2.2 Two-Year Warranty Corrections

If, within two (2) years after the date of Completion of the Work or a designated portion thereof, or after the date for commencement of warranties established hereunder, or by the terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the District to do so. This period of two (2) years shall be extended with respect to portions of the Work first performed after Completion by the period of time between Completion and the actual performance of the Work. This obligation hereunder shall survive District's acceptance of the Work under the Contract and termination of the Contract. The District shall give such notice promptly after discovery of the condition.

23.3 District's Right to Perform Work

23.3.1 If the Contractor should neglect to prosecute the Work properly or fail to perform any provisions of this contract, the District, after **FORTY-EIGHT (48)** hours' written notice to the Contractor, may, without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

23.3.2 If it is found at any time, before or after completion of the Work, that Contractor has varied from the Drawings and/or Specifications, including, but not limited to, variation in material, quality, form, or finish, or in the amount or value of the materials and labor used, District may require at its option:

23.3.2.1 That all such improper Work be removed, remade or replaced, and all work disturbed by these changes be made good by Contractor at no additional cost to the District;

23.3.2.2 That the District deduct from any amount due Contractor the sum of money equivalent to the difference in value between the work performed and that called for by the Drawings and Specifications; or

23.3.2.3 That the District exercise any other remedy it may have at law or under the Contract Documents, including but not limited to the District hiring its own forces or another contractor to replace the Contractor's nonconforming Work, in which case the District shall either issue a deductive Change Order, a Construction Change Directive, or invoice the Contractor for the cost of that work. Contractor shall pay any invoices within thirty (30) days of receipt of same or District may withhold those amounts from payment(s) to Contractor.

24. TERMINATION AND SUSPENSION

24.1 District's Request for Assurances

If District at any time reasonably believes Contractor is or may be in default under this Contract, District may in its sole discretion notify Contractor of this fact and request written assurances from Contractor of performance of Work and a written plan from Contractor to remedy any potential default under the terms this Contract that the District may advise Contractor of in writing. Contractor shall, within ten (10) calendar days of District's request, deliver a written cure plan that meets the District's

requirements in its request for assurances. Contractor's failure to provide such written assurances of performance and the required written plan, within ten (10) calendar days of request, will constitute a material breach of this Contract sufficient to justify termination for cause.

24.2 District's Right to Terminate Contractor for Cause

24.2.1 Grounds for Termination: The District, in its sole discretion, may terminate the Contract and/or terminate the Contractor's right to perform the work of the Contract based upon any of the following:

24.2.1.1 Contractor refuses or fails to execute the Work or any separable part thereof with sufficient diligence as will ensure its completion within the time specified or any extension thereof, or

24.2.1.2 Contractor fails to complete said Work within the time specified or any extension thereof, or

24.2.1.3 Contractor persistently fails or refuses to perform Work or provide material of sufficient quality as to be in compliance with Contract Documents; or

24.2.1.4 Contractor persistently refuses, or repeatedly fails, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials to complete the Work in the time specified; or

24.2.1.5 Contractor fails to make prompt payment to Subcontractors, or for material, or for labor; or

24.2.1.6 Contractor persistently disregards laws, or ordinances, or instructions of District; or

24.2.1.7 Contractor fails to supply labor, including that of Subcontractors, that is sufficient to prosecute the Work or that can work in harmony with all other elements of labor employed or to be employed on the Work; or

24.2.1.8 Contractor or its Subcontractor(s) is/are otherwise in breach, default, or in substantial violation of any provision of this Contract, including but not limited to a lapse in licensing or registration.

24.2.2 Notification of Termination

24.2.2.1 Upon the occurrence at District's sole determination of any of the above conditions, District may, without prejudice to any other right or remedy, serve written notice upon Contractor and its Surety of District's termination of this Contract and/or the Contractor's right to perform the work of the Contract. This notice will contain the reasons for termination. Unless, within three (3) days after the service of the notice, any and all condition(s) shall cease, and any and all violation(s) shall cease, or arrangement satisfactory to District for the correction of the condition(s) and/or violation(s) be made, this Contract and/or the Contractor's right to perform the Work of the Contract shall cease and terminate. Upon termination, Contractor shall not be entitled to receive any further payment until the entire Work is finished.

24.2.2.2 Upon termination, District may immediately serve written notice of tender upon Surety whereby Surety shall have the right to take over and perform this Contract only if Surety:

24.2.2.2.1 Within three (3) days after service upon it of the notice of tender, gives District written notice of Surety's intention to take over and perform this Contract; and

24.2.2.2.2 Commences performance of this Contract within three (3) days from date of serving of its notice to District.

24.2.2.3 Surety shall not utilize Contractor in completing the Project if the District notifies Surety of the District's objection to Contractor's further participation in the completion of the Project. Surety expressly agrees that any contractor which Surety proposes to fulfill Surety's obligations is subject to District's approval. District's approval shall not be unreasonably withheld, conditioned or delayed.

24.2.2.4 If Surety fails to notify District or begin performance as indicated herein, District may take over the Work and execute the Work to completion by any method it may deem advisable at the expense of Contractor and/or its Surety. Contractor and/or its Surety shall be liable to District for any excess cost or other damages the District incurs thereby. Time is of the essence in this Contract. If the District takes over the Work as herein provided, District may, without liability for so doing, take possession of and utilize in completing the Work such materials, appliances, plan, and other property belonging to Contractor as may be on the Site of the Work, in bonded storage, or previously paid for.

24.3 Termination of Contractor for Convenience

24.3.1 District in its sole discretion may terminate the Contract in whole or in part upon three (3) days' written notice to the Contractor.

24.3.2 Upon notice, Contractor shall:

24.3.2.1 Cease operations as directed by the District in the notice;

24.3.2.2 Take necessary actions for the protection and preservation of the Work as soon as possible; and

24.3.2.3 Terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

24.3.3 Within 30 days of the notice, Contractor submit to the District a payment application for the actual cost for labor, materials, and services performed, including all Contractor's and Subcontractor(s)' mobilization and/or demobilization costs, that is unpaid. Contractor shall have no claims against the District except for the actual cost for labor, materials, and services performed that adequately documented through timesheets, invoices, receipts, or otherwise. District shall pay all undisputed invoice(s) for work performed until the notice of termination.

24.3.4 Under a termination for convenience, the District retains the right to all the options available to the District if there is a termination for cause.

24.4 Effect of Termination

24.4.1 Contractor shall, only if ordered to do so by the District, immediately remove from the Site all or any materials and personal property belonging to Contractor that have not been incorporated in the construction of the Work, or which are not in place in the Work. The District retains the right, but not the obligation, to keep and use any materials and personal property belonging to Contractor that have not been incorporated in the construction of the Work, or which are not in place in the Work. The Contractor and its Surety shall be liable upon the Performance Bond for all damages caused to the District by reason of the Contractor's failure to complete the Contract.

24.4.2 In the event that the District shall perform any portion of, or the whole of the Work, pursuant to the provisions of the General Conditions, the District shall not be liable nor account to the Contractor in any way for the time within which, or the manner in which, the Work is performed by the District or for any changes the District may make in the Work or for the money expended by the District in satisfying claims and/or suits and/or other obligations in connection with the Work.

24.4.3 In the event termination for cause is determined to have not been for cause, the termination shall be deemed to have been a termination for convenience effective as of the same date as the purported termination for cause.

24.4.4 In the event that the Contract is terminated for any reason, no allowances or compensation will be granted for the loss of any anticipated profit by the Contractor or any impact or impairment of Contractor's bonding capacity.

24.4.5 If the expense to the District to finish the Work exceeds the unpaid Contract Price, Contractor and Surety shall pay difference to District within twenty-one (21) days of District's request.

24.4.6 The District shall have the right (but shall have no obligation) to assume and/or assign to a general contractor or construction manager or other third party who is qualified and has sufficient resources to complete the Work, the rights of the Contractor under its subcontracts with any or all Subcontractors. In the event of an assumption or assignment by the District, no Subcontractor shall have any claim against the District or third party for Work performed by Subcontractor or other matters arising prior to termination of the Contract. The District or any third party, as the case may be, shall be liable only for obligations to the Subcontractor arising after assumption or assignment. Should the District so elect, the Contractor shall execute and deliver all documents and take all steps, including the legal assignment of its contractual rights, as the District may require, for the purpose of fully vesting in the District the rights and benefits of its Subcontractor under Subcontracts or other obligations or commitments. All payments due the Contractor hereunder shall be subject to a right of offset by the District for expenses and damages suffered by the District as a result of any default, acts, or omissions of the Contractor. Contractor must include this assignment provision in all of its contracts with its Subcontractors.

24.4.7 The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to District.

24.5 Emergency Termination of Public Contracts Act of 1949

24.5.1 This Contract is subject to termination as provided by sections 4410 and 4411 of the Government Code of the State of California, being a portion of the Emergency Termination of Public Contracts Act of 1949.

24.5.1.1 Section 4410 of the Government Code states:

In the event a national emergency occurs, and public work, being performed by contract, is stopped, directly or indirectly, because of the freezing or diversion of materials, equipment or labor, as the result of an order or a proclamation of the President of the United States, or of an order of any federal authority, and the circumstances or conditions are such that it is impracticable within a reasonable time to proceed with a substantial portion of the work, then the public agency and the contractor may, by written agreement, terminate said contract.

24.5.1.2 Section 4411 of the Government Code states:

Such an agreement shall include the terms and conditions of the termination of the contract and provision for the payment of compensation or money, if any, which either party shall pay to the other or any other person, under the facts and circumstances in the case.

24.5.2 Compensation to the Contractor shall be determined at the sole discretion of District on the basis of the reasonable value of the Work done, including preparatory work. As an exception to the foregoing and at the District's discretion, in the case of any fully completed separate item or portion of the Work for which there is a separate previously submitted unit price or item on the accepted schedule of values, that price shall control. The District, at its sole discretion, may adopt the Contract Price as the reasonable value of the work done or any portion thereof.

24.6 Suspension of Work

24.6.1 District in its sole discretion may suspend, delay or interrupt the Work in whole or in part for such period of time as the District may determine upon three (3) days written notice to the Contractor.

24.6.1.1 An adjustment may be made for changes in the cost of performance of the Work caused by any such suspension, delay or interruption. No adjustment shall be made to the extent:

24.6.1.1.1 That performance is, was or would have been so suspended, delayed or interrupted by another cause for which Contractor is responsible; or

24.6.1.1.2 That an equitable adjustment is made or denied under another provision of the Contract; or

24.6.1.1.3 That the suspension of Work was the direct or indirect result of Contractor's failure to perform any of its obligations hereunder.

24.6.1.2 Any adjustments in cost of performance may have a fixed or percentage fee as provided in the section on Format for Proposed Change Order herein. This amount shall be full compensation for all Contractor's and its Subcontractor(s)' changes in the cost of performance of the Contract caused by any such suspension, delay or interruption.

25. CLAIMS PROCESS

25.1 Obligation to File Claims for Disputed Work

25.1.1 Should Contractor otherwise seek extra time or compensation for any reason whatsoever ("Disputed Work"), then Contractor shall first follow procedures set forth in the Contract Documents including, without limitation, Articles 15, 16 and 17, all of which are conditions precedent to submitting a Claim pursuant to Article 25. A Notice of Delay or Proposed Change Order are less formal procedures that proceed the formal claim and do not constitute a Claim. A Claim also does not include correspondence, RFIs, vouchers, invoices, progress payment applications, or other routine or authorized form of requests for progress payments in compliance with the Contract. If a dispute remains, then Contractor shall give written notice to District that expressly invokes this Article 25 within the time limits set forth herein.

25.1.2 Contractor's sole and exclusive remedy for Disputed Work is to file a written claim setting forth Contractor's position as required herein within the time limits set forth herein.

25.2 Duty to Perform during Claim Process

Contractor and its subcontractors shall continue to perform its Work under the Contract including the disputed work, and shall not cause a delay of the Work during any dispute, claim, negotiation, mediation, or arbitration proceeding, except by written agreement by the District.

25.3 Definition of Claim

25.3.1 Pursuant to Public Contract Code section 9204, the term "Claim" means a separate demand by the Contractor sent by registered mail or certified mail with return receipt requested, for one or more of the following:

25.3.1.1 A time extension, including without limitation, for relief of damages or penalties for delay assessed by the District under the Contract;

25.3.1.2 Payment by the District of money or damages arising from work done by, or on behalf of, the Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or to which Contractor is not otherwise entitled to; or

25.3.1.3 An amount of payment disputed by the District.

25.4 Claims Presentation

25.4.1 Form and Contents of Claim

25.4.1.1 If Contractor intends to submit a Claim for an increase in the Contract Price and/or Contract Time for any reason including, without limitation, the acts of District or its agents, Contractor shall, within thirty (30) days after the event giving rise to the Claim, give notice of the Claim ("Notice of Potential Claim") in writing specifically identifying Contractor is invoking this Article 25 Claims Presentation. The Notice of Potential Claim shall provide Contractor's preliminary request for an adjustment to the Contract Price and/or Contract Time, with a description of the grounds therefore.

25.4.1.2 Within thirty (30) days after serving the written Notice of Potential Claim, Contractor shall provide a Claim including an itemized statement of the details and amounts of its Claim for any increase in the Contract Price of Contract Time as provided below, including a Time Impact Analysis and any and all other documentation substantiating Contractor's claimed damages:

25.4.1.2.1 The issues, events, conditions, circumstances and/or causes giving rise to the dispute, and shall show, in detail, the cause and effect of same;

25.4.1.2.2 Citation to provisions in the Contract Documents, statute sections, and/or case law entitling Contractor to an increase in the Contract Price or Contract Time;

25.4.1.2.3 The pertinent dates and/or durations and actual and/or anticipated effects on the Contract Price, Contract Schedule milestones and/or Contract Time adjustments;

25.4.1.2.4 The Time Impact Analysis of all time delays that shows actual time impact on the critical path; and

25.4.1.2.5 The line-item costs for labor, material, and/or equipment, if applicable, for all cost impacts priced like a change order according to Article 17 and must be updated monthly as to cost and entitlement if a continuing claim.

25.4.1.3 The Claim shall include the following certification by the Contractor:

25.4.1.3.1 The undersigned Contractor certifies under penalty of perjury that the attached dispute is made in good faith; that the supporting data is accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the adjustment for which Contractor believes the District is liable; and that I am duly authorized to certify the dispute on behalf of the Contractor.

25.4.1.3.2 Furthermore, Contractor understands that the value of the attached dispute expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from the Work performed on the Project, additional time required on the Project and/or resulting from delay to the Project including, without limitation, cumulative impacts. Contractor may

not separately recover for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

25.4.2 Contractor shall bear all costs incurred in the preparation and submission of a Claim.

25.4.3 Failure to timely submit a Claim and the requisite supporting documentation shall constitute a waiver of Contractor's claim(s) against the District and Contractor's Claim(s) for compensation or an extension of time shall be deemed waived, released, and discharged as to any entitlement for adjustment to Contract Price and/or Contract Time.

25.5 Claim Resolution pursuant to Public Contract Code section 9204

Contractor may request to waive the claims procedure under Public Contract Code section 9204 and proceed directly to the commencement of a civil action or binding arbitration. If Contractor chooses to proceed, Contractor shall comply with the following steps:

25.5.1 STEP 1:

25.5.1.1 Upon receipt of a Claim by registered or certified mail, return receipt requested, including the documents necessary to substantiate it, the District shall conduct a reasonable review of the Claim and, within a period not to exceed 45 days, shall provide the Contractor a written statement identifying what portion of the Claim is disputed and what portion is undisputed. Upon receipt of a Claim, the District and Contractor may, by mutual agreement, extend the time period to provide a written statement. If the District needs approval from its governing body to provide the Contractor a written statement identifying the disputed portion and the undisputed portion of the Claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of Claim sent by registered mail or certified mail, return receipt requested, the District shall have up to three (3) days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension, expires to provide Contractor a written statement identifying the disputed portion and the undisputed portion.

25.5.1.1.1 Any payment due on an undisputed portion of the Claim shall be processed and made within 60 days after the District issues its written statement. Amounts not paid in a timely manner as required by this section, section 25.4, shall bear interest at seven percent (7%) per annum.

25.5.1.2 Upon receipt of a Claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable. In this instance, District and Contractor must comply with the sections below regarding Public Contract Code section 20104 et seq. and Government Code Claim Act Claims.

25.5.1.3 If the District fails to issue a written statement, or to otherwise meet the time requirements of this section, this shall result in the Claim being deemed rejected in its entirety. A Claim that is denied by reason of the District's failure to have responded to a Claim, or its failure to otherwise meet the time

requirements of this section, shall not constitute an adverse finding with regard to the merits of the Claim or the responsibility or qualifications of Contractor.

25.5.2 STEP 2:

25.5.2.1 If Contractor disputes the District's written response, or if the District fails to respond to a Claim within the time prescribed, Contractor may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the District shall schedule a meet and confer conference within 30 days for settlement of the dispute. Within 10 business days following the conclusion of the meet and confer conference, if the Claim or any portion of the Claim remains in dispute, the District shall provide the Contractor a written statement identifying the portion of the Claim that remains in dispute and the portion that is undisputed.

25.5.2.1.1.1 Any payment due on an undisputed portion of the Claim shall be processed and made within 60 days after the District issues its written statement. Amounts not paid in a timely manner as required by this section, section 25.4, shall bear interest at seven percent (7%) per annum.

25.5.3 STEP 3:

25.5.3.1 Any disputed portion of the Claim, as identified by Contractor in writing, shall be submitted to nonbinding mediation, with the District and Contractor sharing the associated costs equally. The District and Contractor shall mutually agree to a mediator within 10 business days after the disputed portion of the Claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the Claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the Claim remaining in dispute shall be subject to applicable procedures outside this section.

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

25.5.3.2 Unless otherwise agreed to by the District and Contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Public Contract Code section 20104.4 to mediate after litigation has been commenced.

25.5.4 STEP 4:

25.5.4.1 If mediation under this section does not resolve the parties' dispute, the District may, but does not require arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program.

25.6 Subcontractor Pass-Through Claims

25.6.1 If a subcontractor or a lower tier subcontractor lacks legal standing to assert a claim against a District because privity of contract does not exist, the contractor may present to the District a Claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on his or her own behalf or on behalf of a lower tier subcontractor, that Contractor present a Claim for work which was performed by the subcontractor or by a lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the Claim be presented to the District shall furnish reasonable documentation to support the Claim.

25.6.2 Within 45 days of receipt of this written request from a subcontractor, Contractor shall notify the subcontractor in writing as to whether the Contractor presented the Claim to the District and, if Contractor did not present the Claim, provide the subcontractor with a statement of the reasons for not having done so.

25.6.3 The Contractor shall bind all its Subcontractors to the provisions of this section and will hold the District harmless against Claims by Subcontractors.

25.7 Government Code Claim Act Claim

25.7.1 If a claim, or any portion thereof, remains in dispute upon satisfaction of all applicable Claim Resolution requirements the Contractor shall comply with all claims presentation requirements as provided in Chapter 1 (commencing with section 900) and Chapter 2 (commencing with section 910) of Part 3 of Division 3.6 of Title 1 of Government Code as a condition precedent to the Contractor's right to bring a civil action against the District.

25.7.2 Contractor shall bear all costs incurred in the preparation, submission and administration of a Claim. Any claims presented in accordance with the Government Code must affirmatively indicate Contractor's prior compliance with the claims procedure herein of the claims asserted.

25.7.3 For purposes of those provisions, the running of the time within which a claim pursuant to Public Contract Code section 20104.2 only must be presented to the District shall be tolled from the time the claimant submits his or her written claim pursuant to subdivision (a) until the time that claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

25.8 Claim Resolution pursuant to Public Contract Code section 20104 et seq.

25.8.1 In the event of a disagreement between the parties as to performance of the Work, the interpretation of this Contract, or payment or nonpayment for Work performed or not performed, the parties shall attempt to resolve all claims of three hundred seventy-five thousand dollars (\$375,000) or less which arise between Contractor and District by those procedures set forth in Public Contract Code section 20104, et seq., to the extent applicable.

25.8.1.1 Contractor shall file with the District any written Claim, including the documents necessary to substantiate it, upon the application for final payment.

25.8.1.2 For claims of less than fifty thousand dollars (\$50,000), the District shall respond in writing within forty-five (45) days of receipt of the Claim or may request in writing within thirty (30) days of receipt of the Claim any additional documentation supporting the Claim or relating to defenses or claims the District may have against the Contractor.

25.8.1.2.1 If additional information is required, it shall be requested and provided by mutual agreement of the parties.

25.8.1.2.2 District's written response to the documented Claim shall be submitted to the Contractor within fifteen (15) days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor to produce the additional information, whichever is greater.

25.8.1.3 For claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the District shall respond in writing to all written Claims within sixty (60) days of receipt of the claim, or may request, in writing, within thirty (30) days of receipt of the Claim any additional documentation supporting the Claim or relating to defenses or claims the District may have against the Contractor.

25.8.1.3.1 If additional information is required, it shall be requested and provided upon mutual agreement of the District and the Contractor.

25.8.1.3.2 The District's written response to the Claim, as further documented, shall be submitted to the Contractor within thirty (30) days after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor to produce the additional information or requested documentation, whichever is greater.

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

25.8.1.5 Following the meet and confer conference, if the Claim or any portion of it remains in dispute, the Contractor may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions the running of the time within which a claim must be filed shall be tolled from the time the Contractor submits its written Claim until the time the Claim is denied, including any period of time utilized by the meet and confer process.

25.8.1.6 For any civil action filed to resolve claims filed pursuant to this section, within sixty (60) days, but no earlier than thirty (30) days, following the filing of responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within fifteen (15) days by both parties of a

disinterested third person as mediator, shall be commenced within thirty (30) days of the submittal, and shall be concluded within fifteen (15) days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

25.8.1.7 If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of the Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986, (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

25.8.1.8 The District shall not fail to pay money as to any portion of a Claim which is undisputed except as otherwise provided in the Contract Documents. In any suit filed pursuant to this section, the District shall pay interest due at the legal rate on any arbitration award or judgment. Interest shall begin to accrue on the date the suit is filed in a court of law.

25.8.2 Contractor shall bind its Subcontractors to the provisions of this Section and will hold the District harmless against disputes by Subcontractors.

25.9 Claim Procedure Compliance

25.9.1 Failure to submit and administer claims as required in Article 25 shall waive Contractor's right to claim on any specific issues not included in a timely submitted claim. Claim(s) not raised in a timely protest and timely claim submitted under this Article 25 may not be asserted in any subsequent litigation, Government Code Claim, or legal action.

25.9.2 District shall not be deemed to waive any provision under this Article 25, if at District's sole discretion, a claim is administered in a manner not in accord with this Article 25. Waivers or modifications of this Article 25 may only be made by a signed change order approved as to form by legal counsel for both District and Contractor; oral or implied modifications shall be ineffective.

25.10 Claim Resolution Non-Applicability

25.10.1 The procedures for dispute and claim resolutions set forth in this Article shall not apply to the following:

25.10.1.1 Personal injury, wrongful death or property damage claims;

25.10.1.2 Latent defect or breach of warranty or guarantee to repair;

25.10.1.3 Stop payment notices;

25.10.1.4 District's rights set forth in the Article on Suspension and Termination;

25.10.1.5 Disputes arising out of labor compliance enforcement by the Department of Industrial Relations; or

25.10.1.6 District rights and obligations as a public entity set forth in applicable statutes; provided, however, that penalties imposed against a public entity by statutes, including, but not limited to, Public Contract Code sections 20104.50 and 7107, shall be subject to the Claim Resolution requirements provided in this Article.

25.11 Attorney's Fees

25.11.1 Should litigation be necessary to enforce any terms or provisions of this Agreement, then each party shall bear its own litigation and collection expenses, witness fees, court costs, and attorney's fees.

26. STATE LABOR, WAGE & HOUR, APPRENTICE, AND RELATED PROVISIONS

26.1 Labor Compliance and Enforcement

Since this Project is subject to labor compliance and enforcement by the Department of Industrial Relations ("DIR"), Contractor specifically acknowledges and understands that it shall perform the Work of this Agreement while complying with all the applicable provisions of Division 2, Part 7, Chapter 1, of the Labor Code and Title 8 of the California Code of Regulations, including, without limitation, the requirement that the Contractor and all Subcontractors shall timely furnish complete and accurate electronic certified payroll records directly to the DIR. The District may not issue payment if this requirement is not met.

26.2 Wage Rates, Travel, and Subsistence

26.2.1 Pursuant to the provisions of Article 2 (commencing at section 1770), Chapter 1, Part 7, Division 2, of the Labor Code, the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which this public work is to be performed for each craft, classification, or type of worker needed to execute this Contract are on file at the District's principal office and copies will be made available to any interested party on request. Contractor shall obtain and post a copy of these wage rates at the job site.

26.2.2 Holiday and overtime work, when permitted by law, shall be paid for at the general prevailing rate of per diem wages for holiday and overtime work on file with the Director of the Department of Industrial Relations, unless otherwise specified. The holidays upon which those rates shall be paid need not be specified by the District, but shall be all holidays recognized in the applicable collective bargaining agreement. If the prevailing rate is not based on a collectively bargained rate, the holidays upon which the prevailing rate shall be paid shall be as provided in Section 6700 of the Government Code.

26.2.3 Contractor shall pay and shall cause to be paid each worker engaged in Work on the Project the general prevailing rate of per diem wages determined by the Director of the Department of Industrial Relations, regardless of any contractual relationship which may be alleged to exist between Contractor or any Subcontractor and such workers.

26.2.4 If during the period this bid is required to remain open, the Director of the Department of Industrial Relations determines that there has been a change in any prevailing rate of per diem wages in the locality in which the Work under the

Contract is to be performed, such change shall not alter the wage rates in the Notice to Bidders or the Contract subsequently awarded.

26.2.5 Pursuant to Labor Code section 1775, Contractor shall, as a penalty to District, forfeit the statutory amount (believed by the District to be currently up to two hundred dollars (\$200) for each calendar day, or portion thereof, for each worker paid less than the prevailing rates, determined by the District and/or the Director, for the work or craft in which that worker is employed for any public work done under Contract by Contractor or by any Subcontractor under it. The difference between such prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate shall be paid to each worker by Contractor.

26.2.6 Any worker employed to perform Work on the Project, which Work is not covered by any classification listed in the general prevailing wage rate of per diem wages determined by the Director, shall be paid not less than the minimum rate of wages specified therein for the classification which most nearly corresponds to Work to be performed by him, and such minimum wage rate shall be retroactive to time of initial employment of such person in such classification.

26.2.7 Pursuant to Labor Code section 1773.1, per diem wages are deemed to include employer payments for health and welfare, pension, vacation, travel time, subsistence pay, and apprenticeship or other training programs authorized by Labor Code section 3093, and similar purposes.

26.2.8 Contractor shall post at appropriate conspicuous points on the Site of Project, a schedule showing all determined minimum wage rates and all authorized deductions, if any, from unpaid wages actually earned. In addition, Contractor shall post a sign-in log for all workers and visitors to the Site, a list of all subcontractors of any tier on the Site, and the required Equal Employment Opportunity poster(s).

26.3 Hours of Work

26.3.1 As provided in article 3 (commencing at section 1810), chapter 1, part 7, division 2, of the Labor Code, eight (8) hours of labor shall constitute a legal day's work. The time of service of any worker employed at any time by Contractor or by any Subcontractor on any subcontract under this Contract upon the Work or upon any part of the Work contemplated by this Contract shall be limited and restricted by Contractor to eight (8) hours per day, and forty (40) hours during any one week, except as hereinafter provided. Notwithstanding the provisions hereinabove set forth, Work performed by employees of Contractor in excess of eight (8) hours per day and forty (40) hours during any one week, shall be permitted upon this public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half times the basic rate of pay.

26.3.2 Contractor shall keep and shall cause each Subcontractor to keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by Contractor in connection with the Work or any part of the Work contemplated by this Contract. The record shall be kept open at all reasonable hours to the inspection of District and to the Division of Labor Standards Enforcement of the DIR.

26.3.3 Pursuant to Labor Code section 1813, Contractor shall as a penalty to the District forfeit the statutory amount (believed by the District to be currently twenty-five dollars (\$25)) for each worker employed in the execution of this Contract by Contractor or by any Subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week in violation of the provisions of article 3 (commencing at section 1810), chapter 1, part 7, division 2, of the Labor Code.

26.3.4 Any Work necessary to be performed after regular working hours, or on Sundays or other holidays shall be performed without additional expense to the District.

26.4 Payroll Records

26.4.1 Contractor shall upload, and shall cause each Subcontractor performing any portion of the Work under this Contract to upload, an accurate and complete certified payroll record ("CPR") electronically using DIR's eCPR System by uploading the CPRs by electronic XML file or entering each record manually using the DIR's iform (or current form) online on no less than every 30 days while Work is being performed and within 30 days after the final day of Work performed on the Project and within ten (10) days of any request by the District or Labor Commissioner at <http://www.dir.ca.gov/Public-Works/Certified-Payroll-Reporting.html> or current application and URL, showing the name, address, social security number, work classification, straight-time, and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by the Contractor and/or each Subcontractor in connection with the Work.

26.4.1.1 The CPRs enumerated hereunder shall be filed directly with the DIR on a weekly basis or to the requesting party, whether the District or DIR, within ten (10) days after receipt of each written request. The CPRs from the Contractor and each Subcontractor for each week shall be provided on or before Wednesday of the week following the week covered by the CPRs. District may not make any payment to Contractor until:

26.4.1.1.1 Contractor and/or its Subcontractor(s) provide CPRs acceptable to the DIR; and

26.4.1.1.2 Any delay in Contractor and/or its Subcontractor(s) providing CPRs to the DIR in a timely manner may directly delay Contractor's payment.

26.4.2 All CPRs shall be available for inspection at all reasonable hours at the principal office of Contractor on the following basis:

26.4.2.1 A certified copy of an employee's CPR shall be made available for inspection or furnished to the employee or his/her authorized representative on request.

26.4.2.2 CPRs shall be made available for inspection or furnished upon request to a representative of District, Division of Labor Standards Enforcement, Division of Apprenticeship Standards, and/or the DIR.

26.4.2.3 CPRs shall be made available upon request by the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through the District, Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested CPRs have not been provided pursuant to the provisions herein, the requesting party shall, prior to being provided the records, reimburse the costs of preparation by Contractor, Subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal office of Contractor.

26.4.3 Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by District, Division of Apprenticeship Standards, or Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of Contractor awarded Contract or performing Contract shall not be marked or obliterated.

26.4.4 Contractor shall inform District of the location of the records enumerated hereunder, including the street address, city, and county, and shall, within five (5) working days, provide a notice of change of location and address.

26.4.5 In the event of noncompliance with the requirements of this section, Contractor shall have ten (10) days in which to comply subsequent to receipt of written notice specifying in what respects Contractor must comply with this section. Should noncompliance still be evident after the ten (10) day period, Contractor shall, as a penalty to District, forfeit up to one hundred dollars (\$100) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Labor Commissioner, these penalties shall be withheld from progress payments then due.

26.4.6 As Contractor and its subcontractors have agreed to be bound by the terms of the PLA entered into by the District [on or about / dated] June 30, 2022, Contractor and its subcontractors may be excused from uploading CPRs electronically using DIR's eCPR System by uploading the CPRs by electronic XML file or entering each record manually using the DIR's iform (or current form) online at <http://www.dir.ca.gov/Public-Works/Certified-Payroll-Reporting.html> , or by using a more current application and URL. However, within ten (10) days of any request by the District or Labor Commissioner, Contractor and its subcontractors shall provide CPRs showing the name, address, social security number, work classification, straight time, and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by the Contractor and/or each subcontractor in connection with the Work.

26.5 Apprentices

26.5.1 Contractor acknowledges and agrees that, if this Contract involves a dollar amount greater than, or a number of working days greater than that specified in Labor Code section 1777.5, then this Contract is governed by the provisions of Labor Code Section 1777.5. It shall be the responsibility of Contractor to ensure compliance with this Article and with Labor Code section 1777.5 for all apprenticeship occupations.

26.5.2 Apprentices of any crafts or trades may be employed and, when required by Labor Code section 1777.5, shall be employed provided they are properly registered in full compliance with the provisions of the Labor Code.

26.5.3 Every such apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade at which he/she is employed, and shall be employed only at the work of the craft or trade to which she/he is registered.

26.5.4 Only apprentices, as defined in section 3077 of the Labor Code, who are in training under apprenticeship standards and written apprentice agreements under chapter 4 (commencing at section 3070), division 3, of the Labor Code, are eligible to be employed. The employment and training of each apprentice shall be in accordance with the provisions of the apprenticeship standards and apprentice agreements under which he/she is training.

26.5.5 Pursuant to Labor Code section 1777.5, if that section applies to this Contract as indicated above, Contractor and any Subcontractors employing workers in any apprenticeable craft or trade in performing any Work under this Contract shall apply to the applicable joint apprenticeship committee for a certificate approving the Contractor or Subcontractor under the applicable apprenticeship standards and fixing the ratio of apprentices to journeymen employed in performing the Work.

26.5.6 Pursuant to Labor Code section 1777.5, if that section applies to this Contract as indicated above, Contractor and any Subcontractor may be required to make contributions to the apprenticeship program.

26.5.7 If Contractor or Subcontractor willfully fails to comply with Labor Code section 1777.5, then, upon a determination of noncompliance by the Administrator of Apprenticeship, it shall:

26.5.7.1 Be denied the right to bid on any subsequent project for one (1) year from the date of such determination;

26.5.7.2 Forfeit as a penalty to District the full amount as stated in Labor Code section 1777.7. Interpretation and enforcement of these provisions shall be in accordance with the rules and procedures of the California Apprenticeship Council and under the authority of the Chief of the Division of Apprenticeship Standards.

26.5.8 Contractor and all Subcontractors shall comply with Labor Code section 1777.6, which section forbids certain discriminatory practices in the employment of apprentices.

26.5.9 Contractor shall become fully acquainted with the law regarding apprentices prior to commencement of the Work. Special attention is directed to sections 1777.5, 1777.6, and 1777.7 of the Labor Code, and title 8, California Code of Regulations, section 200 et seq. Questions may be directed to the State Division of Apprenticeship Standards, 455 Golden Gate Avenue, 9th floor, San Francisco, California 94102.

26.6 Non-Discrimination

26.6.1 Contractor herein agrees to comply with the provisions of the California Fair Employment and Housing Act as set forth in part 2.8 of division 3 of the

California Government Code, commencing at section 12900; the Federal Civil Rights Act of 1964, as set forth in Public Law 88-352, and all amendments thereto; Executive Order 11246; and all administrative rules and regulations found to be applicable to Contractor and Subcontractor.

26.6.2 Special requirements for Federally Assisted Construction Contracts: During the performance of this Contract, Contractor agrees to incorporate in all subcontracts the provisions set forth in Chapter 60-1.4(b) of Title 41 published in Volume 33 No. 104 of the Federal Register dated May 28, 1968.

26.7 Labor First Aid

Contractor shall maintain emergency first aid treatment for Contractor's workers on the Project which complies with the Federal Occupational Safety and Health Act of 1970 (29 U.S.C. § 651 et seq.) and the California Occupational Safety and Health Act of 1973 (Lab. Code, § 6300 et seq.; 8 Cal. Code of Regs., § 330 et seq.).

27. RESERVED

28. MISCELLANEOUS

28.1 Assignment of Antitrust Actions

28.1.1 Section 7103.5(b) of the Public Contract Code states:

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

28.1.2 Section 4552 of the Government Code states:

In submitting a bid to a public purchasing body, the bidder offers and agrees that if the bid is accepted, it will assign to the purchasing body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, materials, or services by the bidder for sale to the purchasing body pursuant to the bid. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the bidder.

28.1.3 Section 4553 of the Government Code states:

If an awarding body or public purchasing body receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under this chapter, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the public body any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor

but were not paid by the public body as part of the bid price, less the expenses incurred in obtaining that portion of the recovery.

28.1.4 Section 4554 of the Government Code states:

Upon demand in writing by the assignor, the assignee shall, within one year from such demand, reassign the cause of action assigned under this part if the assignor has been or may have been injured by the violation of law for which the cause of action arose and (a) the assignee has not been injured thereby, or (b) the assignee declines to file a court action for the cause of action.

28.1.5 Under this Article, "public purchasing body" is District and "bidder" is Contractor.

28.2 Excise Taxes

If, under Federal Excise Tax Law, any transaction hereunder constitutes a sale on which a Federal Excise Tax is imposed and the sale is exempt from such Federal Excise Tax because it is a sale to a State or Local Government for its exclusive use, District, upon request, will execute documents necessary to show (1) that District is a political subdivision of the State for the purposes of such exemption, and (2) that the sale is for the exclusive use of District. No Federal Excise Tax for such materials shall be included in any Contract Price.

28.3 Taxes

Contract Price is to include any and all applicable sales taxes or other taxes that may be due in accordance with section 7051 et seq. of the Revenue and Taxation Code, Regulation 1521 of the State Board of Equalization or any other tax code that may be applicable.

28.4 Shipments

Contractor is responsible for any or all damage or loss to shipments until delivered and accepted on Site, as indicated in the Contract Documents. There must be no charge for containers, packing, unpacking, drayage, or insurance. The total Contract Price shall be all inclusive (including sales tax) and no additional costs of any type will be considered.

28.5 Compliance with Government Reporting Requirements

If this Contract is subject to federal or other governmental reporting requirements because of federal or other governmental financing in whole or in part for the Project of which it is part, or for any other reason, Contractor shall comply with those reporting requirements at the request of the District at no additional cost.

END OF DOCUMENT

SPECIAL CONDITIONS

1. Mitigation Measures

Contractor as applicable shall comply with all applicable mitigation measures, if any, adopted by any public agency with respect to this Project pursuant to the California Environmental Quality Act. (Public Resources Code section 21000 *et seq.*)

2. Modernization Projects

A. Access. Access to the school buildings and entry to buildings, classrooms, restrooms, mechanical rooms, electrical rooms, or other rooms, for construction purposes, must be coordinated with District and onsite District personnel before Work is to start. Unless agreed to otherwise in writing, only a school custodian will be allowed to unlock and lock doors in existing building(s). The custodian will be available only while school is in session. If a custodian is required to arrive before 7:00 a.m. or leave after 3:30 p.m. to accommodate Contractor's Work, the overtime wages for the custodian will be paid by the Contractor, unless at the discretion of the District, other arrangements are made in advance.

B. Keys. Upon request, the District may, at its own discretion, provide keys to the school site for the convenience of the Contractor. The Contractor agrees to pay all expenses to re-key the entire school site and all other affected District buildings if the keys are lost or stolen, or if any unauthorized party obtains a copy of the key or access to the school.

C. Maintaining Services. The Contractor is advised that Work is to be performed in spaces regularly scheduled for instruction. Interruption and/or periods of shutdown of public access, electrical service, water service, lighting, or other utilities shall be only as arranged in advance with the District. Contractor shall provide temporary services to all facilities interrupted by Contractor's Work.

D. Maintaining Utilities. The Contractor shall maintain in operation during duration of Contract, drainage lines, storm drains, sewers, water, gas, electrical, steam, and other utility service lines within working area.

E. Confidentiality. Contractor shall maintain the confidentiality of all information, documents, programs, procedures and all other items that Contractor encounters while performing the Work. This requirement shall be ongoing and shall survive the expiration or termination of this Contract and specifically includes, without limitation, all student, parent, and employee disciplinary information and health information.

F. Work during Instructional Time. By submitting its bid, Contractor affirms that Work may be performed during ongoing instruction in existing facilities. If so, Contractor agrees to cooperate to the best of its ability to minimize any

disruption to school operations and any use of school facilities by the public up to, and including, rescheduling specific work activities, at no additional cost to District.

G. No Work during Student Testing. Contractor shall, at no additional cost to the District and at the District's request, coordinate its Work to not disturb District students including, without limitation, not performing any Work when students at the Site are taking State or Federally-required tests.

3. Badge Policy for Contractors

All Contractors doing work for the District will provide their workers with identification badges. These badges will be worn by all members of the Contractor's staff who are working in a District facility.

A. Badges must be filled out in full and contain the following information:

3.1.1 Name of Contractor

3.1.2 Name of Employee

3.1.3 Contractor's address and phone number

B. Badges are to be worn when the Contractor or his/her employees are on site and must be visible at all times. Contractors must inform their employees that they are required to allow District employees, the Architect, the Construction Manager, the Program Manager, or the Project Inspector to review the information on the badges upon request.

C. Continued failure to display identification badges as required by this policy may result in the individual being removed from the Project or assessment of fines against the Contractor.

4. Permits, Certificates, Licenses, Fees, Approvals

A. Payment for Permits, Certificates, Licenses, Fees, and Approvals. As required in the General Conditions, the Contractor shall secure and pay for all permits, licenses, approvals, and certificates necessary for the prosecution of the Work with the exception of the following: n/a

With respect to the above-listed items, Contractor shall be responsible for securing such items; however, District will be responsible for payment of these charges or fees. Contractor shall notify the District of the amount due with respect to such items and to whom the amount is payable. Contractor shall provide the District with an invoice and receipt with respect to such charges or fees.

5. As-Builts and Record Drawings

A. When called for by Division 1, Contractor shall submit As-Built Drawings pursuant to the Contract Documents consisting of one set of computer-

aided design and drafting ("CADD") files, PDF format , plus one set of As-Built Drawings in Hard Copy.

B. Contractor shall submit Record Drawings pursuant to the Contract Documents consisting of one set of computer-aided design and drafting ("CADD") files, PDF format, plus one set of Record Drawings in Hard Copy.

6. Construction Manager

The District will use a Construction Manager on the Project that is the subject of this Contract. **Innovative Construction Services, Inc. (ICS), Meredith Collins** is the Construction Manager for this Project.

7. Program Manager

Chris Ralston, Sac City Unified School District is the Program Manager designated for the Project that is the subject of this Contract.

8. RESERVED

9. COVID-19 Safety Requirements

Contractor shall, at its cost, timely comply with all applicable federal, State, and local requirements relating to COVID-19 or other public health emergency/epidemic/pandemic. Further, except to the extent the Order provides otherwise, Contractor and Contractor's personnel, subcontractors and suppliers shall continue to comply with all applicable terms in the California Department of Public Health's State Public Health Officer Orders.

COVID-19 Vaccination/Testing Requirements

Vaccination Requirements

Contractor shall fill out, sign, date and submit to District the COVID-19 Vaccination/Testing Certification Form, attached hereto as **Attachment "A."**

According to the August 11, 2021, California Department of Public Health ("CDPH") State Public Health Officer Order ("Order"), a person is "fully vaccinated" for COVID-19 if two weeks or more have passed since they have received the second dose in a 2-dose series (Pfizer-BioNTech or Moderna or vaccine authorized by the World Health Organization), or two weeks or more have passed since they received a single-dose vaccine (Johnson and Johnson[J&J]/Janssen).

Pursuant to the CDPH Guidance for Vaccine Records Guidelines & Standards, Contractor shall only accept the following as proof of vaccination:

- (a) COVID-19 Vaccination Record Card (issued by the Department of Health and Human Services Centers for Disease Control & Prevention or WHO Yellow Card which includes name of person vaccinated, type of vaccine provided and date last dose administered);
- (b) a photo of a Vaccination Record Card as a separate document;
- (c) a photo of a Vaccination Record Card stored on a phone or electronic device;

(d) documentation of COVID-19 vaccination from a health care provider;

(e) digital record that includes a QR code that when scanned by a SMART Health Card reader displays to the reader name, date of birth, vaccine dates and vaccine type; or

(f) documentation of vaccination from other contracted employers who follow these vaccination records guidelines and standards.

In the absence of knowledge to the contrary, Contractor may accept the documentation presented in (a) through (f) above as valid.

Contractor shall have a plan in place for tracking verified Contractor personnel vaccination status. Records of vaccination verification must be made available, upon request, to the local health jurisdiction for purposes of case investigation.

Contractor personnel, including any and all tiers of subcontractor, supplier, and any other personnel entering the Project site, who are not fully vaccinated, or for whom vaccine status is unknown or documentation is not provided, must be considered unvaccinated.

Weekly Testing Requirements

Contractor shall ensure that Contractor personnel, including any and all tiers of subcontractor, supplier, and any other worker entering the Project site, who are unvaccinated or who are not fully vaccinated are required to undergo diagnostic screening testing, as specified below:

(a) Contractor personnel may be tested with either antigen or molecular tests to satisfy this requirement, but unvaccinated or incompletely vaccinated workers must be tested at least once weekly with either PCR testing or antigen testing. Any PCR (molecular) or antigen test used must either have Emergency Use Authorization by the U.S. Food and Drug Administration or be operating per the Laboratory Developed Test requirements by the U.S. Centers for Medicare and Medicaid Services.

(b) Unvaccinated or not fully vaccinated Contractor personnel must also observe all other infection control requirements, and are not exempted from the testing requirement even if they have a medical contraindication to vaccination, since they are still potentially able to spread the illness. Previous history of COVID-19 from which the individual recovered more than 90 days earlier, or a previous positive antibody test for COVID-19, do not waive this requirement for testing.

Contractor shall have a plan in place for tracking test results and conducting workplace contact tracing, and must report results to local public health departments, if applicable.

[ATTACHMENT "A" ON NEXT PAGE]

ATTACHMENT "A"
COVID-19 VACCINATION/TESTING CERTIFICATION

Contractor: _____

The California Department of Public Health ("CDPH") requires, pursuant to its August 11, 2021, Order ("Order"), that all public and private schools serving students in transitional kindergarten through grade twelve, unless exempt, are required to verify the vaccine status of all K-12 school workers, effective October 15, 2021. Further, pursuant to the Order, all such schools are required to verify that all workers are either fully vaccinated or undergo weekly diagnostic testing.

In light of these CDPH requirements, Contractor certifies that the following entity:

_____ has verified that the Contractor personnel providing services at District's Project site(s):

- Have all been fully vaccinated in accordance with the CDPH Order.

- Have not all been fully vaccinated, but those who are unvaccinated or not fully vaccinated undergo weekly diagnostic testing in accordance with the CDPH Order.

- Have not been fully vaccinated and do not undergo weekly diagnostic testing in accordance with the CDPH Order.

Contractor understands that the District's Project site will need to comply with the CDPH Order's COVID-19 requirements for fully vaccinated personnel or unvaccinated personnel. Personnel who are not fully vaccinated or decline to state their vaccination status will be treated as unvaccinated, and Contractor will comply with the CDPH Order, and all applicable state and local laws for vaccinated and unvaccinated personnel.

CERTIFICATION

I, _____, certify that I am Contractor's _____ and that I have made a diligent effort to ascertain the facts with regard to the representations made herein.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

HAZARDOUS MATERIALS
PROCEDURES & REQUIREMENTS

1. Summary

This document includes information applicable to hazardous materials and hazardous waste abatement.

2. Notice of Hazardous Waste or Materials

- a. Contractor shall give notice in writing to the District, the Construction Manager, and the Architect promptly, before any of the following materials are disturbed, and in no event later than twenty-four (24) hours after first observance, of any:
 - (1) Material that Contractor believes may be a material that is hazardous waste or hazardous material, as defined in section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law;
 - (2) Other material that may present a substantial danger to persons or property exposed thereto in connection with Work at the site.
- b. Contractor's written notice shall indicate whether the hazardous waste or material was shown or indicated in the Contract Documents to be within the scope of Work, and whether the materials were brought to the site by Contractor, its Subcontractors, suppliers, or anyone else for whom Contractor is responsible. As used in this section the term "hazardous materials" shall include, without limitation, asbestos, lead, Polychlorinated biphenyl (PCB), petroleum and related hydrocarbons, and radioactive material.
- c. In response to Contractor's written notice, the District shall investigate the identified conditions.
- d. If the District determines that conditions do not involve hazardous materials or that no change in terms of Contract is justified, the District shall so notify Contractor in writing, stating reasons. If the District and Contractor cannot agree on whether conditions justify an adjustment in Contract Price or Contract Time, or on the extent of any adjustment, Contractor shall proceed with the Work as directed by the District.
- e. If after receipt of notice from the District, Contractor does not agree to resume Work based on a reasonable belief it is unsafe, or does not agree to resume Work under special conditions, then District may order such portion of Work that is in connection with such hazardous condition or such affected area to be deleted from the Work, or performed by others, or District may invoke its rights to terminate the Contract in whole or in part. District will determine entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Time as a result of deleting such portion of Work, or performing the Work by others.

- f. If Contractor stops Work in connection with any hazardous condition and in any area affected thereby, Contractor shall immediately redeploy its workers, equipment, and materials, as necessary, to other portions of the Work to minimize delay and disruption.

3. Additional Warranties and Representations

- a. Contractor represents and warrants that it, its employees, and its subcontractors and their employees, shall at all times have the required levels of familiarity with the Site and the Work, training, and ability to comply fully with all applicable laws and contractual requirements for safe and expeditious performance of the Work, including whatever training is or may be required regarding the activities to be performed (including, but not limited to, all training required to address adequately the actual or potential dangers of Contract performance).
- b. Contractor represents and warrants that it, its employees, and its subcontractors and their employees, shall at all times have and maintain in good standing any and all certifications and licenses required by applicable federal, state, and other governmental and quasi-governmental requirements applicable to the Work.
- c. Contractor represents and warrants that it has studied carefully all requirements of the Specifications regarding procedures for demolition, hazardous waste abatement, or safety practices, specified in the Contract, and prior to submitting its bid, has either (a) verified to its satisfaction that the specified procedures are adequate and sufficient to achieve the results intended by the Contract Documents, or (b) by way of approved "or equal" request or request for clarification and written Addenda, secured changes to the specified procedures sufficient to achieve the results intended by the Contract Documents. Contractor accepts the risk that any specified procedure will result in a completed Project in full compliance with the Contract Documents.

4. Monitoring and Testing

- a. District reserves the right, in its sole discretion, to conduct air monitoring, earth monitoring, Work monitoring, and any other tests (in addition to testing required under the agreement or applicable law), to monitor Contract requirements of safe and statutorily compliant work methods and (where applicable) safe re-entry level air standards under state and federal law upon completion of the job, and compliance of the work with periodic and final inspection by public and quasi-public entities having jurisdiction.
- b. Contractor acknowledges that District has the right to perform, or cause to be performed, various activities and tests including, but not limited to, pre-abatement, during abatement, and post-abatement air monitoring, that District shall have no obligation to perform said activities and tests, and that a portion of said activities and tests may take place prior to the completion of the Work by Contractor. In the event District elects to perform these activities and tests, Contractor shall afford District ample access to the Site and all areas of the Work as may be necessary for the performance of these activities and tests. Contractor will include the potential impact of these

activities or tests by District in the Contract Price and the Scheduled Completion Date.

- c. Notwithstanding District's rights granted by this paragraph, Contractor may retain its own industrial hygiene consultant at Contractor's own expense and may collect samples and may perform tests including, but not limited to, pre-abatement, during abatement, and post-abatement personal air monitoring, and District reserves the right to request documentation of all such activities and tests performed by Contractor relating to the Work and Contractor shall immediately provide that documentation upon request.

5. Compliance with Laws

- a. Contractor shall perform safe, expeditious, and orderly work in accordance with the best practices and the highest standards in the hazardous waste abatement, removal, and disposal industry, the applicable law, and the Contract Documents, including, but not limited to, all responsibilities relating to the preparation and return of waste shipment records, all requirements of the law, delivering of all requisite notices, and obtaining all necessary governmental and quasi-governmental approvals.
- b. Contractor represents that it is familiar with and shall comply with all laws applicable to the Work or completed Work including, but not limited to, all federal, state, and local laws, statutes, standards, rules, regulations, and ordinances applicable to the Work relating to:
 - (1) The protection of the public health, welfare and environment;
 - (2) Storage, handling, or use of asbestos, PCB, lead, petroleum based products, radioactive material, or other hazardous materials;
 - (3) The generation, processing, treatment, storage, transport, disposal, destruction, or other management of asbestos, PCB, lead, petroleum, radioactive material, or hazardous waste materials or other waste materials of any kind; and
 - (4) The protection of environmentally sensitive areas such as wetlands and coastal areas.

6. Disposal

- a. Contractor has the sole responsibility for determining current waste storage, handling, transportation, and disposal regulations for the job Site and for each waste disposal facility. Contractor must comply fully at its sole cost and expense with these regulations and any applicable law. District may, but is not obligated to, require submittals with this information for it to review consistent with the Contract Documents.
- b. Contractor shall develop and implement a system acceptable to District to track hazardous waste from the Site to disposal, including appropriate "Hazardous Waste Manifests" on the EPA form, so that District may track the volume of waste it put in each landfill and receive from each landfill a certificate of receipt.

- c. Contractor shall provide District with the name and address of each waste disposal facility prior to any disposal, and District shall have the express right to reject any proposed disposal facility. Contractor shall not use any disposal facility to which District has objected. Contractor shall document actual disposal or destruction of waste at a designated facility by completing a disposal certificate or certificate of destruction forwarding the original to the District.

7. Permits

- a. Before performing any of the Work, and at such other times as may be required by applicable law, Contractor shall deliver all requisite notices and obtain the approval of all governmental and quasi-governmental authorities having jurisdiction over the Work. Contractor shall submit evidence satisfactory to District that it and any disposal facility:
 - (1) have obtained all required permits, approvals, and the like in a timely manner both prior to commencement of the Work and thereafter as and when required by applicable law; and
 - (2) are in compliance with all such permits, approvals and the regulations.

For example, before commencing any work in connection with the Work involving asbestos-containing materials, or PCBs, or other hazardous materials subject to regulation, Contractor agrees to provide the required notice of intent to renovate or demolish to the appropriate state or federal agency having jurisdiction, by certified mail, return receipt requested, or by some other method of transmittal for which a return receipt is obtained, and to send a copy of that notice to District. Contractor shall not conduct any Work involving asbestos-containing materials or PCBs unless Contractor has first confirmed that the appropriate agency having jurisdiction is in receipt of the required notification. All permits, licenses, and bonds that are required by governmental or quasi-governmental authorities, and all fees, deposits, tap fees, offsite easements, and asbestos and PCB disposal facilities expenses necessary for the prosecution of the Work, shall be procured and paid for by Contractor. Contractor shall give all notices and comply with the all applicable laws bearing on the conduct of the Work as drawn and specified. If Contractor observes or reasonably should have observed that Plans and Specifications and other Contract Documents are at variance therewith, it shall be responsible for promptly notifying District in writing of such fact. If Contractor performs any Work contrary to applicable laws, it shall bear all costs arising therefrom.

- b. In the case of any permits or notices held in District's name or of necessity to be made in District's name, District shall cooperate with Contractor in securing the permit or giving the notice, but the Contractor shall prepare for District review and execution upon approval, all necessary applications, notices, and other materials.

8. Indemnification

To the fullest extent permitted by law, the indemnities and limitations of liability expressed throughout the Contract Documents apply with equal force and effect to any claims or liabilities imposed or existing by virtue of the removal, abatement, and disposal of hazardous waste. This includes, but is not limited to, liabilities connected to the selection and use of a waste disposal facility, a waste transporter, personal injury, property damage, loss of use of property, damage to the environment or natural resources, or "disposal" and "release" of materials associated with the Work (as defined in 42 U.S.C. § 9601 *et seq.*).

9. Termination

District shall have an absolute right to terminate for default immediately without notice and without an opportunity to cure should Contractor knowingly or recklessly commit a material breach of the terms of the Contract Documents, or any applicable law, on any matter involving the exposure of persons or property to hazardous waste. However, if the breach of contract exposing persons or property to hazardous waste is due solely to an ordinary, unintentional, and non-reckless failure to exercise reasonable care, then the procedures for termination for cause shall apply without modification.

END OF DOCUMENT

EXHIBIT A – Site Logistics Plan

(NOT USED)

EXHIBIT B - Hazardous Materials Procedures and Requirements

(NOT USED)

EXHIBIT C – Geohazard and Geotechnical Engineering Report

Attached

EXHIBIT D - DSA Structural Test & Inspection Requirements (DSA 103)

Attached

EXHIBIT E – Storm Water Pollution Prevention Plan (SWPPP)

(NOT USED)

EXHIBIT F – Mitigation Measures

(NOT USED)

SUMMARY OF WORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Site Access Conditions and Requirements;
- B. Special Conditions.

1.02 SUMMARY OF WORK COVERED BY CONTRACT DOCUMENTS

The Work of this Contract includes but is not limited to: Removal of existing bleachers and selective fencing. Site relocation of existing baseball and softball fields. Improvements at the baseball field to include construction of new 30' tall chain link backstop with optional netted hood, netting fencing along third baseline. Softball field to include 30' tall chain link backstop and netting fencing along first baseline. Both softball and baseball fields will include home and visitor CMU dugouts. The home side dugouts for both softball and baseball will have storage closets, single station batting cages, single station bullpen for visitors and home side. New double-sided sport specific scoreboards and flagpole located adjacent to scoreboard. Construction to include perimeter fencing. New synthetic turf golf facility with associated fencing. Installation of associated hardscape, fencing, landscaping, drinking fountain, site utilities, electrical infrastructure, pathway and path of travel for accessibility requirements.

Alternate #01: Install synthetic turf at golf putting green perimeter in lieu of landscape and irrigation. If bid alternate is accepted, work to include but not limited to construction on synthetic turf putting green perimeter and related improvements including but not limited to hardscape, utilities and irrigation.

- A. Included but not limited to:
 - 1. Furnish and install all labor, material and equipment for all Work shown and/or specified in accordance with the Contract Documents, except as excluded below.
 - 2. This scope of work Section 1.02 also applies to all applicable awarded alternates.
 - 3. Information provided under "Also Included" points out some items which may be considered less obvious or "unconventional", but which are included in the Scope of Work.
 - 4. This Bid Package Description is intended to clarify scope to the Contractor, but is in no way intended to limit scope that is reasonable inferable as being required by the Work included in this description. Work required under the Bid Package may be shown as specified anywhere in the Contract Documents.

Also Included but not limited to:

1. Coordination with other Contractors working on this campus
2. Weather protection during the course of construction
3. Temporary barricades, signs, pedestrian protection, temporary facilities, and traffic control Work.
4. Daily and Final Clean-up.
5. Qualified/Certified Technicians must perform the replacement and/or repair of all landscape, irrigation asphalt/concrete surfaces and above or below grade utilities disturbed during construction, and the District must be given the opportunity to test and accept the Work prior to covering it up.
6. Patching, repairing, painting and/or replacement of all finished surfaces disturbed during construction.
7. Provide temporary means of operation for existing storm, water, sewer, gas, mechanical, electrical, and low voltage systems during construction.
8. Perform an electronic underground existing utility survey by a qualified underground utility locator service company in all areas where trenching operations will be performed. An as-built record drawing (one hard copy and one copy on electronic media prepared in AutoCAD is required to be submitted at the conclusion of the underground scope of Work.
9. Contractor to perform ball/flush/camera of all affected sanitary sewer and/or storm drains prior to and post construction. Video shall be turned over to the District and should include audio and locations.
10. Any campus utility interruptions require a minimum of a 48-hour notice to the District Representative for coordination purposes.
11. A full-time superintendent shall be provided.
12. All demolition and removal and/or replacement of Work associated with this Bid Package.
13. Contractor to provide its own water for its grading activities. Onsite water (hose bibs) will not be sufficient for grading activities.

1.03 CONTRACTS

- A. Perform the Work under a single, fixed-price Contract.

1.04 WORK BY OTHERS

- A. Work on the Project that will be performed and completed prior to the start of the Work of this Contract.
- B. Work on the Project that will be performed by others concurrent with the Work of this Contract.

1.05 CODES, REGULATIONS, AND STANDARDS

- A. The codes, regulations, and standards adopted by the state and federal agencies having jurisdiction shall govern minimum requirements for this Project. Where codes, regulations, and standards conflict with the Contract Documents, these conflicts shall be brought to the immediate attention of the District and the Architect.

- B. Codes, regulations, and standards shall be as published effective as of date of bid opening, unless otherwise specified or indicated.

1.06 PROJECT RECORD DOCUMENTS

- A. Contractor shall maintain on Site one set of the following record documents; Contractor shall record actual revisions to the Work:
 - (1) Contract Drawings.
 - (2) Specifications.
 - (3) Addenda.
 - (4) Change Orders and other modifications to the Contract.
 - (5) Reviewed shop drawings, product data, and samples.
 - (6) Field test records.
 - (7) Inspection certificates.
 - (8) Manufacturer's certificates.
- B. Contractor shall store Record Documents separate from documents used for construction. Provide files, racks, and secure storage for Record Documents and samples.
- C. Contractor shall record information concurrent with construction progress.
- D. Specifications: Contractor shall legibly mark and record at each product section of the Specifications the description of the actual product(s) 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 Change Orders and written directives.

1.07 EXAMINATION OF EXISTING CONDITIONS

- A. Contractor shall be held to have examined the Project Site and acquainted itself with the conditions of the Site and of the streets or roads approaching the Site.
- B. Prior to commencement of Work, Contractor shall survey the Site and existing buildings and improvements to observe existing damage and defects such as cracks, sags, broken, missing or damaged glazing, other building elements and Site improvements, and other damage.
- C. Should Contractor observe cracks, sags, and other damage to and defects of the Site and adjacent buildings, paving, and other items not indicated in the

Contract Documents, Contractor shall immediately report same to the District and the Architect.

1.08 CONTRACTOR'S USE OF PREMISES

- A. If unoccupied and only with District's prior written approval, Contractor may use the building(s) at the Project Site without limitation for its operations, storage, and office facilities for the performance of the Work. If the District chooses to beneficially occupy any building(s), Contractor must obtain the District's written approval for Contractor's use of spaces and types of operations to be performed within the building(s) while so occupied. Contractor's access to the building(s) shall be limited to the areas indicated.
- B. If the space at the Project Site is not sufficient for Contractor's operations, storage, office facilities and/or parking, Contractor shall arrange and pay for any additional facilities needed by Contractor.
- C. Contractor shall not interfere with use of or access to occupied portions of the building(s) or adjacent property.
- D. Contractor shall maintain corridors, stairs, halls, and other exit-ways of building clear and free of debris and obstructions at all times.
- E. No one other than those directly involved in the demolition and construction, or specifically designated by the District or the Architect shall be permitted in the areas of work during demolition and construction activities.
- F. The Contractor shall install the construction fence and maintain that it will be locked when not in use. Keys to this fencing will be provided to the District.

1.09 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. The Drawings show above-grade and below-grade structures, utility lines, and other installations that are known or believed to exist in the area of the Work. Contractor shall locate these existing installations before proceeding with excavation and other operations that could damage same; maintain them in service, where appropriate; and repair damage to them caused by the performance of the Work. Should damage occur to these existing installations, the costs of repair shall be at the Contractor's expense and made to the District's satisfaction.
- B. Contractor shall be alert to the possibility of the existence of additional structures and utilities. If Contractor encounters additional structures and utilities, Contractor will immediately report to the District for disposition of same as indicated in the General Conditions.

1.10 UTILITY SHUTDOWNS AND INTERRUPTIONS

- A. Contractor shall give the District a minimum of three (3) days written notice in advance of any need to shut off existing utility services or to effect equipment interruptions. The District will set exact time and duration for shutdown, and will assist Contractor with shutdown. Work required to re-establish utility services shall be performed by the Contractor.

- B. Contractor shall obtain District's written approval as indicated in the General Conditions in advance of deliveries of material or equipment or other activities that may conflict with District's use of the building(s) or adjacent facilities.

1.11 STRUCTURAL INTEGRITY

- A. Contractor shall be responsible for and supervise each operation and work that could affect structural integrity of various building elements, both permanent and temporary.
- B. Contractor shall include structural connections and fastenings as indicated or required for complete performance of the Work.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

ALLOWANCE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Non-specified work.

1.2 RELATED SECTIONS

A. Document 01 10 00 (Summary of Work)

B. Document 01 29 00 (Payments and Completion)

C. Document 01 32 19 (Submittal Procedures)

1.3 ALLOWANCES

A. Included in the Contract, a stipulated sum/price of **\$500,000.00**.

As Owner allowances within the limits set forth in the Contract Documents. These Allowance(s) shall not be utilized without written approval by the District.

B. Contractor's costs, without overhead and profit, for products, delivery, installation, labor, insurance, payroll, taxes, bonding and equipment rental will be included in Allowance Expenditure Directive authorizing expenditure of funds from this Allowance. No overhead and profit shall be added to the Allowance Expenditure Directive.

C. Funds will be drawn from Allowance only with District approval evidenced by an Allowance Expenditure Directive.

D. At Contract closeout, funds remaining in Allowance will be credited to District by Change Order.

E. Whenever costs are more than the Allowance, the amount covered by the Allowance will be approved at cost. The Contract Price shall be adjusted by Change Order for amounts in excess of the Allowance.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF DOCUMENT

ALTERNATES AND UNIT PRICING

PART 1 – ALTERNATES

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions;
- B. Special Conditions;
- C. Bid Form and Proposal;
- D. Instruction to Bidders.

1.02 DESCRIPTION

The items of work indicated below propose modifications to, substitutions for, additions to and/or deletions from the various parts of the Work specified in other Sections of the Specifications. The acceptance or rejection of any of the alternates is strictly at the option of the District subject to District's acceptance of Contractor's stated prices contained in this Proposal.

Alternate #01: install synthetic turf at golf putting green perimeter in lieu of landscape and irrigation. If bid alternate is accepted, work to include but not limited to construction on synthetic turf putting green perimeter and related improvements including but not limited to hardscape, utilities, and irrigation.

1.03 GENERAL

Where an item is omitted, or scope of Work is decreased, all Work pertaining to the item whether specifically stated or not, shall be omitted and where an item is added or modified or where scope of Work is increased, all Work pertaining to that required to render same ready for use on the Project in accordance with intention of Drawings and Specifications shall be included in an agreed upon price amount.

1.04 BASE BID

The Base Bid includes all work required to construct the Project completely and in accordance with the Contract Documents.

1.05 ALTERNATES

The above Alternate descriptions are general in nature and for reference purposes only. The Contract Documents, including, without limitation, the Drawings and Specifications, must be referred to for the complete scope of Work.

PART 2 - UNIT PRICING (NOT USED)

2.01 GENERAL

Contractor shall completely state all required figures based on Unit Prices listed below. Where scope of Work is decreased, all Work pertaining to the item, whether specifically stated or not, shall be omitted and where scope of Work is increased, all work pertaining to that item required to render same ready for use on the Project in accordance with intention of Drawings and Specifications shall be included in an agreed upon price amount.

2.02 UNIT PRICES

Furnish unit prices for each of the named items on a square foot, lineal foot, or per each basis, as applies. Unit prices shall include all labor, materials, services, profit, overhead, insurance, bonds, taxes, and all other incidental costs of Contractor, subcontractors, and supplier(s).

END OF DOCUMENT

PRODUCT OPTIONS AND SUBSTITUTIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. Instructions to Bidders;
- B. General Conditions, including, without limitation, Substitutions For Specified Items; and
- C. Special Conditions.

1.02 SUBSTITUTIONS OF MATERIALS AND EQUIPMENT

- A. Catalog numbers and specific brands or trade names followed by the designation "or equal" are used in conjunction with material and equipment required by the Specifications to establish the standards of quality, utility, and appearance required. Substitutions which are equal in quality, utility, and appearance to those specified may be reviewed subject to the provisions of the General Conditions.
- B. Wherever more than one manufacturer's product is specified, the first-named product is the basis for the design used in the work and the use of alternative-named manufacturers' products or substitutes may require modifications in that design. If such alternatives are proposed by Contractor and are approved by the District and/or the Architect, Contractor shall assume all costs required to make necessary revisions and modifications of the design resulting from the substitutions requested by the Contractor.
- C. When materials and equipment are specified by first manufacturer's name and product number, second manufacturer's name and "or approved equal," supporting data for the second product, if proposed by Contractor, shall be submitted in accordance with the requirements for substitutions. The District's Board has found and determined that certain item(s) shall be used on this Project based on the purpose(s) indicated pursuant to Public Contract Code section 3400(c). These findings, as well as the products and brand or trade names, have been identified in the Notice to Bidders.
- D. The Contractor will not be allowed to substitute specified items unless the request for substitution is submitted as follows:
 - (1) District must receive any notice of request for substitution of a specified item a minimum of ten (10) calendar days prior to bid opening.

- (2) Within 35 days after the date of the Notice of Award, the Contractor shall submit data substantiating the request(s) for all substitution(s) containing sufficient information to assess acceptability of product or system and impact on Project, including, without limitation, the requirements specified in the Special Conditions and the technical Specifications. Insufficient information shall be grounds for rejection of substitution.
- E. If the District and/or Architect, in reviewing proposed substitute materials and equipment, require revisions or corrections to be made to previously accepted Shop Drawings and supplemental supporting data to be resubmitted, Contractor shall promptly do so. If any proposed substitution is judged by the District and/or Architect to be unacceptable, the specified material or equipment shall be provided.
- F. Samples may be required. Tests required by the District and/or Architect for the determination of quality and utility shall be made at the expense of Contractor, with acceptance of the test procedure first given by the District.
- G. In reviewing the supporting data submitted for substitutions, the District and/or Architect will use for purposes of comparison all the characteristics of the specified material or equipment as they appear in the manufacturer's published data even though all the characteristics may not have been particularly mentioned in the Contract Documents. If more than two (2) submissions of supporting data are required, the cost of reviewing the additional supporting data shall be borne by Contractor, and the District will deduct the costs from the Contract Price. The Contractor shall be responsible for any re-design costs occasioned by District's acceptance and/or approval of any substitute.
- H. The Contractor shall, in the event that a substitute is less costly than that specified, credit the District with one hundred percent (100%) of the net difference between the substitute and the originally specified material. In this event, the Contractor agrees to execute a deductive Change Order to reflect that credit. In the event Contractor furnishes a material, process, or article more expensive than that specified, the difference in the cost of that material, process, or article so furnished shall be borne by Contractor.
- I. In no event shall the District be liable for any increase in Contract Price or Contract Time due to any claimed delay in the evaluation of any proposed substitute or in the acceptance or rejection of any proposed substitute.
- J. All Substitutions affecting DSA regulated items, or related to DSA SSS, ACS, and FLS items shall be considered as a CCD or Addenda and shall be submitted to and approved by DSA prior to installation and/or fabrication, per CCR 4-338(c) and IR 4-6. Any cost changes associated with this work during construction shall be at the contractor's expense.

PART 2 – PRODUCTS Not used

PART 3 – EXECUTION Not used

END OF DOCUMENT

DOCUMENT 01 26 00

CHANGES IN THE WORK

CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE PROVISIONS IN THE AGREEMENT, GENERAL CONDITIONS, AND SPECIAL CONDITIONS, IF USED, RELATED TO CHANGES AND/OR REQUESTS FOR CHANGES.

END OF DOCUMENT

DOCUMENT 01 29 00

**APPLICATION FOR PAYMENT AND
CONDITIONAL AND UNCONDITIONAL WAIVER AND RELEASE FORMS**

**CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS IN THE GENERAL
CONDITIONS RELATED TO APPLICATIONS FOR PAYMENT AND/OR PAYMENTS.**

**SACRAMENTO CITY USD
HJHS Baseball/Softball/Golf Facility**

**APPLICATION FOR PAYMENT AND
CONDITIONAL AND UNCONDITIONAL
WAIVER AND RELEASE FORMS
DOCUMENT 01 29 00-1**

**CONDITIONAL WAIVER AND RELEASE
ON PROGRESS PAYMENT
(CIVIL CODE SECTION 8132)**

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Through Date: _____

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____

Amount of Check: \$ _____

Check Payable to: _____

Exceptions

This document does not affect any of the following:

- (1) Retentions.
- (2) Extras for which the claimant has not received payment.
- (3) The following progress payments for which the claimant has previously given a conditional waiver and release but has not received payment:

Date(s) of waiver and release: _____

Amount(s) of unpaid progress payment(s): \$ _____

**SACRAMENTO CITY USD
HJHS Baseball/Softball/Golf Facility**

**APPLICATION FOR PAYMENT AND
CONDITIONAL AND UNCONDITIONAL
WAIVER AND RELEASE FORMS
DOCUMENT 01 29 00-2**

- (4) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

**UNCONDITIONAL WAIVER AND RELEASE
ON PROGRESS PAYMENT
(CIVIL CODE SECTION 8134)**

NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Through Date: _____

Unconditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has received the following progress payment: \$_____

Exceptions

This document does not affect any of the following:

- (1) Retentions.
- (2) Extras for which the claimant has not received payment.
- (3) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

**CONDITIONAL WAIVER AND RELEASE
ON FINAL PAYMENT
(CIVIL CODE SECTION 8136)**

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____

Amount of Check: \$ _____

Check Payable to: _____

Exceptions

This document does not affect any of the following: _____

Disputed claims for extras in the amount of: \$ _____

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

**UNCONDITIONAL WAIVER AND RELEASE
ON FINAL PAYMENT
(CIVIL CODE SECTION 8138)**

NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Unconditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for all labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has been paid in full.

Exceptions

This document does not affect any of the following: _____

Disputed claims for extras in the amount of: \$_____

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

PROJECT MEETINGS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions; and
- B. Special Conditions.

1.02 PROGRESS MEETINGS:

- A. The District Representative shall schedule and hold regular weekly progress meetings after a minimum of one week's prior written notice of the meeting date and time to all Invitees as indicated below.
- B. Location: Contractor's field office.
- C. The Contractor shall notify and invite the following entities ("Invitees"):
 - (1) District Representative.
 - (2) Contractor.
 - (3) Contractor's Project Manager.
 - (4) Contractor's Superintendent.
 - (5) Subcontractors, as appropriate to the agenda of the meeting.
 - (6) Suppliers, as appropriate to the agenda of the meeting.
 - (7) Construction Manager, if any.
 - (8) Architect
 - (9) Engineer(s), if any and as appropriate to the agenda of the meeting.
 - (10) Others, as appropriate to the agenda of the meeting.
- D. The District's and/or the Architect's Consultants will attend at their discretion, in response to the agenda.
- E. The District representative, the Construction Manager, and/or another District Agent shall take and distribute meeting notes to attendees and other concerned parties. If exceptions are taken to anything in the meeting notes,

those exceptions shall be stated in writing to the District within five (5) working days following District's distribution of the meeting notes.

1.03 PRE-INSTALLATION/PERFORMANCE MEETING:

- A. Contractor shall schedule a meeting prior to the start of each of the following portions of the Work: n/a Contractor shall invite all Invitees to this meeting, and others whose work may affect or be affected by the quality of the cutting and patching work.
- B. Contractor shall review in detail prior to this meeting, the manufacturer's requirements and specifications, applicable portions of the Contract Documents, Shop Drawings, and other submittals, and other related work. At this meeting, invitees shall review and resolve conflicts, incompatibilities, or inadequacies discovered or anticipated.
- C. Contractor shall review in detail Project conditions, schedule, requirements for performance, application, installation, and quality of completed Work, and protection of adjacent Work and property.
- D. Contractor shall review in detail means of protecting the completed Work during the remainder of the construction period.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

SCHEDULING OF WORK

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions;
- B. Special Conditions;
- C. Summary of Work; and
- D. Submittals.

1.02 SECTION INCLUDES

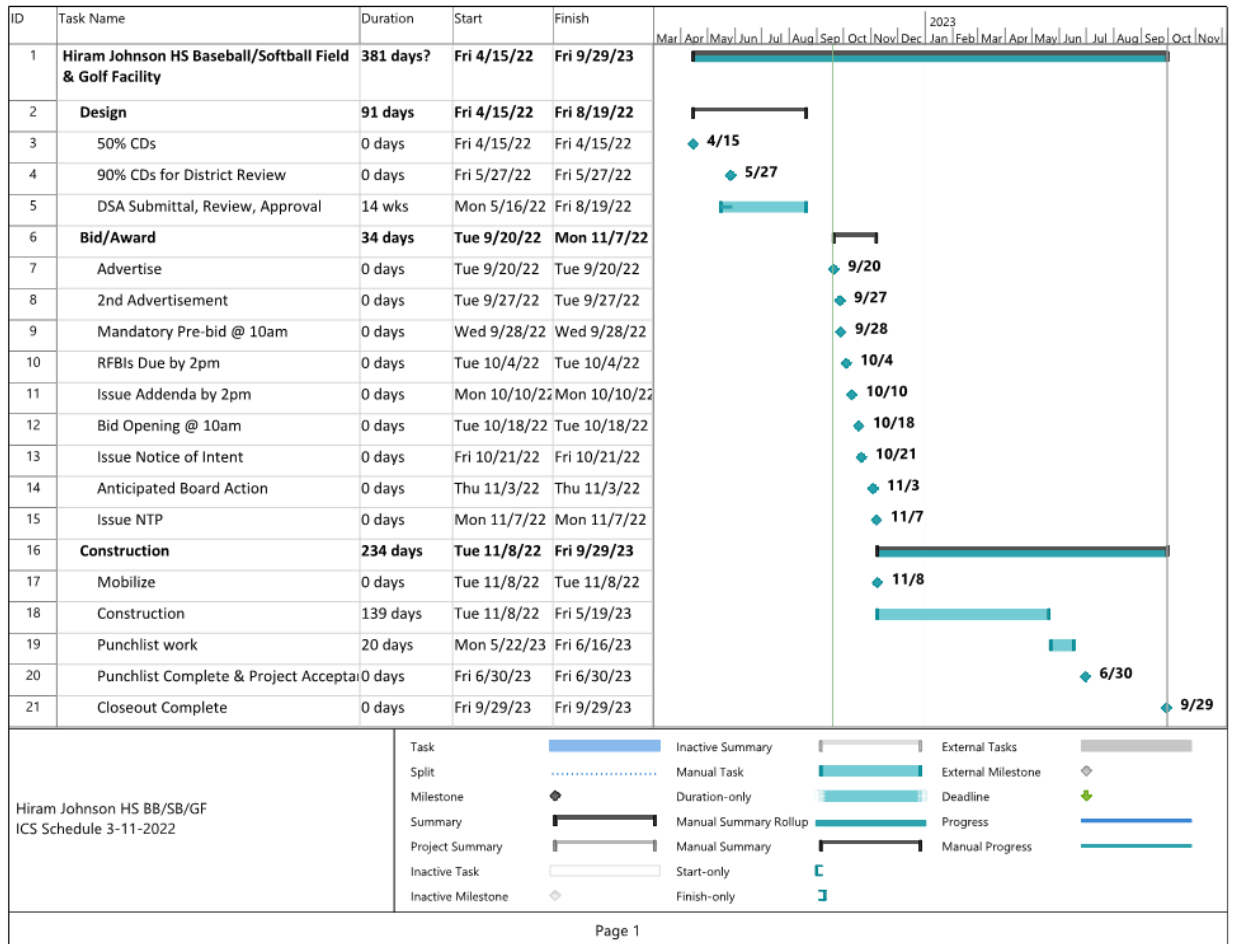
- A. Scheduling of Work under this Contract shall be performed by Contractor in accordance with requirements of this Section.
 - (1) Development of schedule, cost and resource loading of the schedule, monthly payment requests, and project status reporting requirements of the Contract shall employ computerized Critical Path Method ("CPM") scheduling ("CPM Schedule").
 - (2) CPM Schedule shall be cost loaded based on Schedule of Values as approved by District.
 - (3) Submit schedules and reports as specified in the General Conditions.
- B. Upon Award of Contract, Contractor shall immediately commence development of Initial and Original CPM Schedules to ensure compliance with CPM Schedule submittal requirements.

1.03 CONSTRUCTION SCHEDULE

- A. Within ten (10) days of issuance of the Notice of Intent to Award and before request for first progress payment, the Contractor shall prepare and submit to the Project Manager a construction progress schedule conforming to the Milestone Schedule below.
- B. The Construction Schedule shall be continuously updated, and an updated schedule shall be submitted with each application for progress payment. Each revised schedule shall indicate the work actually accomplished during the previous period and the schedule for completion of the remaining work.

C. Milestone Schedule:

Preliminary Construction Schedule



1.04 QUALIFICATIONS

- A. Contractor shall employ experienced scheduling personnel qualified to use the latest version of [i.e., Primavera Project Planner]. Experience level required is set forth below. Contractor may employ such personnel directly or may employ a consultant for this purpose.
- (1) The written statement shall identify the individual who will perform CPM scheduling.
 - (2) Capability and experience shall be verified by description of construction projects on which individual has successfully applied computerized CPM.
 - (3) Required level of experience shall include at least two (2) projects of similar nature and scope with value not less than three fourths (¾) of

the Total Bid Price of this Project. The written statement shall provide contact persons for referenced projects with current telephone and address information.

- B. District reserves the right to approve or reject Contractor's scheduler or consultant at any time. District reserves the right to refuse replacing of Contractor's scheduler or consultant, if District believes replacement will negatively affect the scheduling of Work under this Contract.

1.05 GENERAL

- A. Progress Schedule shall be based on and incorporate milestone and completion dates specified in Contract Documents.
- B. Overall time of completion and time of completion for each milestone shown on Progress Schedule shall adhere to times in the Contract, unless an earlier (advanced) time of completion is requested by Contractor and agreed to by District. Any such agreement shall be formalized by a Change Order.
 - (1) District is not required to accept an early completion schedule, i.e., one that shows an earlier completion date than the Contract Time.
 - (2) Contractor shall not be entitled to extra compensation in event agreement is reached on an earlier completion schedule and Contractor completes its Work, for whatever reason, beyond completion date shown in its early completion schedule but within the Contract Time.
 - (3) A schedule showing the work completed in less than the Contract Time, and that has been accepted by District, shall be considered to have Project Float. The Project Float is the time between the scheduled completion of the work and the Completion Date. Project Float is a resource available to both District and the Contractor.
- C. Ownership Project Float: Neither the District nor Contractor owns Project Float. The Project owns the Project Float. As such, liability for delay of the Completion Date rests with the party whose actions, last in time, actually cause delay to the Completion Date.
 - (1) For example, if Party A uses some, but not all of the Project Float and Party B later uses remainder of the Project Float as well as additional time beyond the Project Float, Party B shall be liable for the time that represents a delay to the Completion Date.
 - (2) Party A would not be responsible for the time since it did not consume the entire Project Float and additional Project Float remained; therefore, the Completion Date was unaffected by Party A.
- D. Progress Schedule shall be the basis for evaluating job progress, payment requests, and time extension requests. Responsibility for developing Contract CPM Schedule and monitoring actual progress as compared to Progress Schedule rests with Contractor.

- E. Failure of Progress Schedule to include any element of the Work, or any inaccuracy in Progress Schedule, will not relieve Contractor from responsibility for accomplishing the Work in accordance with the Contract. District's acceptance of schedule shall be for its use in monitoring and evaluating job progress, payment requests, and time extension requests and shall not, in any manner, impose a duty of care upon District, or act to relieve Contractor of its responsibility for means and methods of construction.
- F. Software: Use **District Preferred Project Planning Software**. Such software shall be compatible with Windows operating system. Contractor shall transmit contract file to District on compact disk at times requested by District.
- G. Transmit each item under the form approved by District.
 - (1) Identify Project with District Contract number and name of Contractor.
 - (2) Provide space for Contractor's approval stamp and District's review stamps.
 - (3) Submittals received from sources other than Contractor will be returned to the Contractor without District's review.

1.06 INITIAL CPM SCHEDULE

- A. Initial CPM Schedule submitted for review at the pre-construction conference shall serve as Contractor's schedule for up to ninety (90) calendar days after the Notice to Proceed.
- B. Indicate detailed plan for the Work to be completed in first ninety (90) days of the Contract; details of planned mobilization of plant and equipment; sequence of early operations; procurement of materials and equipment. Show Work beyond ninety (90) calendar days in summary form.
- C. Initial CPM Schedule shall be time scaled.
- D. Initial CPM Schedule shall be cost and resource loaded. Accepted cost and resource loaded schedule will be used as basis for monthly progress payments until acceptance of the Original CPM Schedule. Use of Initial CPM Schedule for progress payments shall not exceed ninety (90) calendar days.
- E. District and Contractor shall meet to review and discuss the Initial CPM Schedule within seven (7) calendar days after it has been submitted to District.
 - (1) District's review and comment on the schedule shall be limited to Contract conformance (with sequencing, coordination, and milestone requirements).
 - (2) Contractor shall make corrections to schedule necessary to comply with Contract requirements and shall adjust schedule to incorporate any missing information requested by District. Contractor shall resubmit Initial CPM Schedule if requested by District.

- F. If, during the first ninety (90) days after Notice to Proceed, the Contractor is of the opinion that any of the Work included on its Initial CPM Schedule has been impacted, the Contractor shall submit to District a written Time Impact Evaluation ("TIE") in accordance with Article 1.12 of this Section. The TIE shall be based on the most current update of the Initial CPM Schedule.

1.07 ORIGINAL CPM SCHEDULE

- A. Submit a detailed proposed Original CPM Schedule presenting an orderly and realistic plan for completion of the Work in conformance with requirements as specified herein.
- B. Progress Schedule shall include or comply with following requirements:
- (1) Time scaled, cost and resource (labor and major equipment) loaded CPM schedule.
 - (2) No activity on schedule shall have duration longer than fifteen (15) work days, with exception of submittal, approval, fabrication and procurement activities, unless otherwise approved by District.
 - (a) Activity durations shall be total number of actual work days required to perform that activity.
 - (3) The start and completion dates of all items of Work, their major components, and milestone completion dates, if any.
 - (4) District furnished materials and equipment, if any, identified as separate activities.
 - (5) Activities for maintaining Project Record Documents.
 - (6) Dependencies (or relationships) between activities.
 - (7) Processing/approval of submittals and shop drawings for all material and equipment required per the Contract. Activities that are dependent on submittal acceptance or material delivery shall not be scheduled to start earlier than expected acceptance or delivery dates.
 - (a) Include time for submittals, re-submittals and reviews by District. Coordinate with accepted schedule for submission of Shop Drawings, samples, and other submittals.
 - (b) Contractor shall be responsible for all impacts resulting from re-submittal of Shop Drawings and submittals.
 - (8) Procurement of major equipment, through receipt and inspection at jobsite, identified as separate activity.
 - (a) Include time for fabrication and delivery of manufactured products for the Work.
 - (b) Show dependencies between procurement and construction.

- (9) Activity description; what Work is to be accomplished and where.
- (10) The total cost of performing each activity shall be total of labor, material, and equipment, excluding overhead and profit of Contractor. Overhead and profit of the General Contractor shall be shown as a separate activity in the schedule. Sum of cost for all activities shall equal total Contract value.
- (11) Resources required (labor and major equipment) to perform each activity.
- (12) Responsibility code for each activity corresponding to Contractor or Subcontractor responsible for performing the Work.
- (13) Identify the activities which constitute the controlling operations or critical path. No more than twenty-five (25%) of the activities shall be critical or near critical. Near critical is defined as float in the range of one (1) to (10) days.
- (14) Twenty (20) workdays for developing punch list(s), completion of punch-list items, and final clean up for the Work or any designated portion thereof. No other activities shall be scheduled during this period.
- (15) Interface with the work of other contractors, District, and agencies such as, but not limited to, utility companies.
- (16) Show detailed Subcontractor Work activities. In addition, furnish copies of Subcontractor schedules upon which CPM was built.
 - (a) Also furnish for each Subcontractor, as determined by District, submitted on Subcontractor letterhead, a statement certifying that Subcontractor concurs with Contractor's Original CPM Schedule and that Subcontractor's related schedules have been incorporated, including activity duration, cost and resource loading.
 - (b) Subcontractor schedules shall be independently derived and not a copy of Contractor's schedule.
 - (c) In addition to Contractor's schedule and resource loading, obtain from electrical, mechanical, and plumbing Subcontractors, and other Subcontractors as required by District, productivity calculations common to their trades, such as units per person day, feet of pipe per day per person, feet of wiring per day per person, and similar information.
 - (d) Furnish schedule for Contractor/Subcontractor CPM schedule meetings which shall be held prior to submission of Original CPM schedule to District. District shall be permitted to attend scheduled meetings as an observer.
- (17) Activity durations shall be in Work days.

- (18) Submit with the schedule a list of anticipated non-Work days, such as weekends and holidays. The Progress Schedule shall exclude in its Work day calendar all non-Work days on which Contractor anticipates critical Work will not be performed.
- C. Original CPM Schedule Review Meeting: Contractor shall, within sixty (60) days from the Notice to Proceed date, meet with District to review the Original CPM Schedule submittal.
 - (1) Contractor shall have its Project Manager, Project Superintendent, Project Scheduler, and key Subcontractor representatives, as required by District, in attendance. The meeting will take place over a continuous one (1) day period.
 - (2) District's review will be limited to submittal's conformance to Contract requirements including, but not limited to, coordination requirements. However, review may also include:
 - (a) Clarifications of Contract Requirements.
 - (b) Directions to include activities and information missing from submittal.
 - (c) Requests to Contractor to clarify its schedule.
 - (3) Within five (5) days of the Schedule Review Meeting, Contractor shall respond in writing to all questions and comments expressed by District at the Meeting.

1.08 ADJUSTMENTS TO CPM SCHEDULE

- A. Adjustments to Original CPM Schedule: Contractor shall have adjusted the Original CPM Schedule submittal to address all review comments from original CPM Schedule review meeting and resubmit network diagrams and reports for District's review.
 - (1) District, within ten (10) days from date that Contractor submitted the revised schedule, will either:
 - (a) Accept schedule and cost and resource loaded activities as submitted, or
 - (b) Advise Contractor in writing to review any part or parts of schedule which either do not meet Contract requirements or are unsatisfactory for District to monitor Project's progress, resources, and status or evaluate monthly payment request by Contractor.
 - (2) District may accept schedule with conditions that the first monthly CPM Schedule update be revised to correct deficiencies identified.

- (3) When schedule is accepted, it shall be considered the "Original CPM Schedule" which will then be immediately updated to reflect the current status of the work.
 - (4) District reserves right to require Contractor to adjust, add to, or clarify any portion of schedule which may later be discovered to be insufficient for monitoring of Work or approval of partial payment requests. No additional compensation will be provided for such adjustments, additions, or clarifications.
- B. Acceptance of Contractor's schedule by District will be based solely upon schedule's compliance with Contract requirements.
 - (1) By way of Contractor assigning activity durations and proposing sequence of Work, Contractor agrees to utilize sufficient and necessary management and other resources to perform work in accordance with the schedule.
 - (2) Upon submittal of schedule update, updated schedule shall be considered "current" CPM Schedule.
 - (3) Submission of Contractor's schedule to District shall not relieve Contractor of total responsibility for scheduling, sequencing, and pursuing Work to comply with requirements of Contract Documents, including adverse effects such as delays resulting from ill-timed Work.
- C. Submittal of Original CPM Schedule, and subsequent schedule updates, shall be understood to be Contractor's representation that the Schedule meets requirements of Contract Documents and that Work shall be executed in sequence indicated on the schedule.
- D. Contractor shall distribute Original CPM Schedule to Subcontractors for review and written acceptance, which shall be noted on Subcontractors' letterheads to Contractor and transmitted to District for the record.

1.09 MONTHLY CPM SCHEDULE UPDATE SUBMITTALS

- A. Following acceptance of Contractor's Original CPM Schedule, Contractor shall monitor progress of Work and adjust schedule each month to reflect actual progress and any anticipated changes to planned activities.
 - (1) Each schedule update submitted shall be complete, including all information requested for the Original CPM Schedule submittal.
 - (2) Each update shall continue to show all Work activities including those already completed. These completed activities shall accurately reflect "as built" information by indicating when activities were actually started and completed.
- B. A meeting will be held on approximately the twenty-fifth (25th) of each month to review the schedule update submittal and progress payment application.

- (1) At this meeting, at a minimum, the following items will be reviewed: Percent (%) complete of each activity; Time Impact Evaluations for Change Orders and Time Extension Request; actual and anticipated activity sequence changes; actual and anticipated duration changes; and actual and anticipated Contractor delays.
 - (2) These meetings are considered a critical component of overall monthly schedule update submittal and Contractor shall have appropriate personnel attend. At a minimum, these meetings shall be attended by Contractor's General Superintendent and Scheduler.
 - (3) Contractor shall plan on the meeting taking no less than four (4) hours.
- C. Within five (5) working days after monthly schedule update meeting, Contractor shall submit the updated CPM Schedule update.
- D. Within five (5) work days of receipt of above noted revised submittals, District will either accept or reject monthly schedule update submittal.
- (1) If accepted, percent (%) complete shown in monthly update will be basis for Application for Payment by the Contractor. The schedule update shall be submitted as part of the Contractor's Application for Payment.
 - (2) If rejected, update shall be corrected and resubmitted by Contractor before the Application for Payment is submitted.
- E. Neither updating, changing or revising of any report, curve, schedule, or narrative submitted to District by Contractor under this Contract, nor District's review or acceptance of any such report, curve, schedule or narrative shall have the effect of amending or modifying in any way the Completion Date or milestone dates or of modifying or limiting in any way Contractor's obligations under this Contract.

1.10 SCHEDULE REVISIONS

- A. Updating the Schedule to reflect actual progress shall not be considered revisions to the Schedule. Since scheduling is a dynamic process, revisions to activity durations and sequences are expected on a monthly basis.
- B. To reflect revisions to the Schedule, the Contractor shall provide District with a written narrative with a full description and reasons for each Work activity revised. For revisions affecting the sequence of work, the Contractor shall provide a schedule diagram which compares the original sequence to the revised sequence of work. The Contractor shall provide the written narrative and schedule diagram for revisions two (2) working days in advance of the monthly schedule update meeting.
- C. Schedule revisions shall not be incorporated into any schedule update until the revisions have been reviewed by District. District may request further information and justification for schedule revisions and Contractor shall,

within three (3) days, provide District with a complete written narrative response to District's request.

- D. If the Contractor's revision is still not accepted by District, and the Contractor disagrees with District's position, the Contractor has seven (7) calendar days from receipt of District's letter rejecting the revision to provide a written narrative providing full justification and explanation for the revision. The Contractor's failure to respond in writing within seven (7) calendar days of District's written rejection of a schedule revision shall be contractually interpreted as acceptance of District's position, and the Contractor waives its rights to subsequently dispute or file a claim regarding District's position.
- E. At District's discretion, the Contractor can be required to provide Subcontractor certifications of performance regarding proposed schedule revisions affecting said Subcontractors.

1.11 RECOVERY SCHEDULE

- A. If the Schedule Update shows a completion date twenty-one (21) calendar days beyond the Contract Completion Date, or individual milestone completion dates, the Contractor shall submit to District the proposed revisions to recover the lost time within seven (7) calendar days. As part of this submittal, the Contractor shall provide a written narrative for each revision made to recapture the lost time. If the revisions include sequence changes, the Contractor shall provide a schedule diagram comparing the original sequence to the revised sequence of work.
- B. The revisions shall not be incorporated into any schedule update until the revisions have been reviewed by District.
- C. If the Contractor's revisions are not accepted by District, District and the Contractor shall follow the procedures in paragraph 1.09.C, 1.09.D and 1.09.E above.
- D. At District's discretion, the Contractor can be required to provide Subcontractor certifications for revisions affecting said Subcontractors.

1.12 TIME IMPACT EVALUATION ("TIE") FOR CHANGE ORDERS, AND OTHER DELAYS

- A. When Contractor is directed to proceed with changed Work, the Contractor shall prepare and submit within fourteen (14) calendar days from the Notice to Proceed a TIE which includes both a written narrative and a schedule diagram depicting how the changed Work affects other schedule activities. The schedule diagram shall show how the Contractor proposes to incorporate the changed Work in the schedule and how it impacts the current schedule-update critical path. The Contractor is also responsible for requesting time extensions based on the TIE's impact on the critical path. The diagram must be tied to the main sequence of schedule activities to enable District to evaluate the impact of changed Work to the scheduled critical path.
- B. Contractor shall be required to comply with the requirements of Paragraph 1.09.A for all types of delays such as, but not limited to,

Contractor/Subcontractor delays, adverse weather delays, strikes, procurement delays, fabrication delays, etc.

- C. Contractor shall be responsible for all costs associated with the preparation of TIEs, and the process of incorporating them into the current schedule update. The Contractor shall provide District with four (4) copies of each TIE.
- D. Once agreement has been reached on a TIE, the Contract Time will be adjusted accordingly. If agreement is not reached on a TIE, the Contract Time may be extended in an amount District allows, and the Contractor may submit a claim for additional time claimed by contractor.

1.13 TIME EXTENSIONS

- A. The Contractor is responsible for requesting time extensions for time impacts that, in the opinion of the Contractor, impact the critical path of the current schedule update. Notice of time impacts shall be given in accord with the General Conditions.
- B. Where an event for which District is responsible impacts the projected Completion Date, the Contractor shall provide a written mitigation plan, including a schedule diagram, which explains how (e.g., increase crew size, overtime, etc.) the impact can be mitigated. The Contractor shall also include a detailed cost breakdown of the labor, equipment, and material the Contractor would expend to mitigate District-caused time impact. The Contractor shall submit its mitigation plan to District within fourteen (14) calendar days from the date of discovery of the impact. The Contractor is responsible for the cost to prepare the mitigation plan.
- C. Failure to request time, provide TIE, or provide the required mitigation plan will result in Contractor waiving its right to a time extension and cost to mitigate the delay.
- D. No time will be granted under this Contract for cumulative effect of changes.
- E. District will not be obligated to consider any time extension request unless the Contractor complies with the requirements of Contract Documents.
- F. Failure of the Contractor to perform in accordance with the current schedule update shall not be excused by submittal of time extension requests.
- G. If the Contractor does not submit a TIE within the required fourteen (14) calendar days for any issue, it is mutually agreed that the Contractor does not require a time extension for said issue.

1.14 SCHEDULE REPORTS

- A. Submit four (4) copies of the following reports with the Initial CPM Schedule, the Original CPM Schedule, and each monthly update.
- B. Required Reports:

- (1) Two activity listing reports: one sorted by activity number and one by total Project Float. These reports shall also include each activity's early/late and actual start and finish dates, original and remaining duration, Project Float, responsibility code, and the logic relationship of activities.
- (2) Cost report sorted by activity number including each activity's associated cost, percentage of Work accomplished, earned value- to date, previous payments, and amount earned for current update period.
- (3) Schedule plots presenting time-scaled network diagram showing activities and their relationships with the controlling operations or critical path clearly highlighted.
- (4) Cash flow report calculated by early start, late start, and indicating actual progress. Provide an exhibit depicting this information in graphic form.
- (5) Planned versus actual resource (i.e., labor) histogram calculated by early start and late start.

C. Other Reports:

In addition to above reports, District may request, from month to month, any two of the following reports. Submit four (4) copies of all reports.

- (1) Activities by early start.
- (2) Activities by late start.
- (3) Activities grouped by Subcontractors or selected trades.
- (4) Activities with scheduled early start dates in a given time frame, such as fifteen (15) or thirty (30) day outlook.

D. Furnish District with report files on compact disks containing all schedule files for each report generated.

1.15 PROJECT STATUS REPORTING

- A. In addition to submittal requirements for CPM scheduling identified in this Section, Contractor shall provide a monthly project status report (i.e., written narrative report) to be submitted in conjunction with each CPM Schedule as specified herein. Status reporting shall be in form specified below.
- B. Contractor shall prepare monthly written narrative reports of status of Project for submission to District. Written status reports shall include:
 - (1) Status of major Project components (percent (%) complete, amount of time ahead or behind schedule) and an explanation of how Project will be brought back on schedule if delays have occurred.

- (2) Progress made on critical activities indicated on CPM Schedule.
- (3) Explanations for any lack of work on critical path activities planned to be performed during last month.
- (4) Explanations for any schedule changes, including changes to logic or to activity durations.
- (5) List of critical activities scheduled to be performed next month.
- (6) Status of major material and equipment procurement.
- (7) Any delays encountered during reporting period.
- (8) Contractor shall provide printed report indicating actual versus planned resource loading for each trade and each activity. This report shall be provided on weekly and monthly basis.
 - (a) Actual resource shall be accumulated in field by Contractor, and shall be as noted on Contractor's daily reports. These reports will be basis for information provided in computer-generated monthly and weekly printed reports.
 - (b) Contractor shall explain all variances and mitigation measures.
- (9) Contractor may include any other information pertinent to status of Project. Contractor shall include additional status information requested by District at no additional cost.
- (10) Status reports, and the information contained therein, shall not be construed as claims, notice of claims, notice of delay, or requests for changes or compensation.

1.16 WEEKLY SCHEDULE REPORT

At the Weekly Progress Meeting, the Contractor shall provide and present a time-scaled three (3) week look-ahead schedule that is based and correlated by activity number to the current schedule (i.e., Initial, Original CPM, or Schedule Update).

1.17 DAILY CONSTRUCTION REPORTS

On a daily basis, Contractor shall submit a daily activity report to District for each workday, including weekends and holidays when worked. Contractor shall develop the daily construction reports on a computer-generated database capable of sorting daily Work, manpower, and man-hours by Contractor, Subcontractor, area, sub-area, and Change Order Work. Upon request of District, furnish computer disk of this data base. Obtain District's written approval of daily construction report data base format prior to implementation. Include in report:

- A. Project name and Project number.
- B. Contractor's name and address.

- C. Weather, temperature, and any unusual site conditions.
- D. Brief description and location of the day's scheduled activities and any special problems and accidents, including Work of Subcontractors. Descriptions shall be referenced to CPM scheduled activities.
- E. Worker quantities for its own Work force and for Subcontractors of any tier.
- F. Equipment, other than hand tools, utilized by Contractor and Subcontractors.

1.18 PERIODIC VERIFIED REPORTS

Contractor shall complete and verify construction reports on a form prescribed by the Division of the State Architect and file reports on the first day of February, May, August, and November during the preceding quarter year; at the completion of the Contract; at the completion of the Work; at the suspension of Work for a period of more than one (1) month; whenever the services of Contractor or any of Contractor's Subcontractors are terminated for any reason; and at any time a special verified report is required by the Division of the State Architect. Refer to section 4-336 and section 4-343 of Part 1, Title 24 of the California Code of Regulations.

PART 2 – PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

SUBMITTALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Contractor's Submittals and Schedules, Drawings and Specifications;
- B. Special Conditions.

1.02 SECTION INCLUDES:

- A. Definitions:
 - (1) Shop Drawings and Product Data are as indicated in the General Conditions and include, but are not limited to, fabrication, erection, layout and setting drawings, formwork and falsework drawings, manufacturers' standard drawings, descriptive literature, catalogues, brochures, performance and test data, wiring and control diagrams. In addition, there are other drawings and descriptive data pertaining to materials, equipment, piping, duct and conduit systems, and methods of construction as may be required to show that the materials, equipment or systems and all positions conform to the requirement of the Contract Documents, including, without limitation, the Drawings.
 - (2) "Manufactured" applies to standard units usually mass-produced; "fabricated" means specifically assembled or made out of selected materials to meet design requirements. Shop Drawings shall establish the actual detail of manufactured or fabricated items, indicated proper relation to adjoining work and amplify design details of mechanical and electrical equipment in proper relation to physical spaces in the structure.
 - (3) Manufacturer's Instructions: Where any item of Work is required by the Contract Documents to be furnished, installed, or performed, at a minimum, in accordance with a specified product manufacturer's instructions, the Contractor shall procure and distribute copies of these to the District, the Architect, and all other concerned parties and shall furnish, install, or perform the work, at a minimum, in accordance with those instructions.

- B. Samples, Shop Drawings, Product Data, and other items as specified, in accordance with the following requirements:
- (1) Contractor shall submit all Shop Drawings, Product Data, and Samples to the District, the Architect, the Project Inspector, and the Construction Manager.
 - (2) Contractor shall comply with all time frames herein and in the General Conditions and, in any case, shall submit required information in sufficient time to permit proper consideration and action before ordering any materials or items represented by such Shop Drawings, Product Data, and/or Samples.
 - (3) Contractor shall allow sufficient time so that no delay occurs due to required lead time in ordering or delivery of any item to the Site. Contractor shall be responsible for any delay in progress of Work due to its failure to observe these requirements.
 - (4) Time for completion of Work shall not be extended on account of Contractor's failure to promptly submit Shop Drawings, Product Data, and/or Samples.
 - (5) Reference numbers on Shop Drawings shall have Architectural and/or Engineering Contract Drawings reference numbers for details, sections, and "cuts" shown on Shop Drawings. These reference numbers shall be in addition to any numbering system that Contractor chooses to use or has adopted as standard.
 - (6) When the magnitude or complexity of submittal material prevents a complete review within the stated time frame, Contractor shall make this submittal in increments to avoid extended delays.
 - (7) Contractor shall certify on submittals for review that submittals conform to Contract requirements. Also certify that Contractor-furnished equipment can be installed in allocated space. In event of any variance, Contractor shall specifically state in transmittal and on Shop Drawings, portions vary and require approval of a substitute. Submittals shall not be used as a means of requesting a substitution.
 - (8) Unless specified otherwise, sampling, preparation of samples, and tests shall be in accordance with the latest standard of the American Society for Testing and Materials.
 - (9) Upon demand by Architect or District, Contractor shall submit samples of materials and/or articles for tests or examinations and consideration before Contractor incorporates same in Work. Contractor shall be solely responsible for delays due to sample(s) not being submitted in time to allow for tests. Acceptance or rejection will be expressed in writing. Work shall be equal to approved samples in every respect. Samples that are of value after testing will remain the property of Contractor.

- C. Submittal Schedule:
- (1) Contractor shall prepare its proposed submittal schedule that is coordinated with the proposed construction schedule and submit both to the District within ten (10) days after the date of the Notice to Proceed. Contractor's proposed schedules shall become the Project Construction Schedule and the Project Submittal Schedule after each is approved by the District.
 - (2) Contractor is responsible for all lost time should the initial submittal be rejected, marked "revise and resubmit", etc.
 - (3) All Submittals shall be forwarded to the District by the date indicated on the approved Submittal Schedule, unless an earlier date is necessary to maintain the Construction Schedule, in which case those Submittals shall be forwarded to the District so as not to delay the Construction Schedule.
 - (4) Contractor may be assessed \$100 a day for each day it is late in submitting a shop drawing or sample. No extensions of time will be granted to Trade Contractor or any Subcontractor because of its failure to have shop drawings and samples submitted in accordance with the Schedule.

1.03 SHOP DRAWINGS:

- A. Contractor shall submit one reproducible transparency and six (6) opaque reproductions. The District will review and return the reproducible copy and one (1) opaque reproduction to Contractor.
- B. Before commencing installation of any Work, the Contractor shall submit and receive approval of all drawings, descriptive data, and material list(s) as required to accomplish Work.
- C. Review of Shop Drawings is regarded as a service to assist Contractor and in all cases original Contract Documents shall take precedence as outlined under General Conditions.
- D. No claim for extra time or payment shall be based on work shown on Shop Drawings unless the claim is (1) noted on Contractor's transmittal letter accompanying Shop Drawings and (2) Contractor has complied with all applicable provisions of the General Conditions, including, without limitation, provisions regarding changes and payment, and all required written approvals.
- E. District shall not review Shop Drawings for quantities of materials or number of items supplied.
- F. District's and/or Architect's review of Shop Drawing will be general. District and/or Architect review does not relieve Contractor of responsibility for dimensions, accuracy, proper fitting, construction of Work, furnishing of materials, or Work required by Contract Documents and not indicated on

Shop Drawings. The District's and/or Architect's review of Shop Drawings is not to be construed as approving departures from Contract Documents.

- G. Review of Shop Drawings and Schedules does not relieve Contractor from responsibility for any aspect of those Drawings or Schedules that is a violation of local, County, State, or Federal laws, rules, ordinances, or rules and regulations of commissions, boards, or other authorities or utilities having jurisdiction.
- H. Before submitting Shop Drawings for review, Contractor shall check Shop Drawings of its subcontractors for accuracy, and confirm that all Work contiguous with and having bearing on other work shown on Shop Drawings is accurately drawn and in conformance with Contract Documents.
- I. Submitted drawings and details must bear stamp of approval of Contractor:
 - (1) Stamp and signature shall clearly certify that Contractor has checked Shop Drawings for compliance with Drawings.
 - (2) If Contractor submits a Shop Drawing without an executed stamp of approval, or whenever it is evident (despite stamp) that Drawings have not been checked, the District and/or Architect will not consider them and will return them to the Contractor for revision and resubmission. In that event, it will be deemed that Contractor has not complied with this provision and Contractor shall bear risk of all delays to same extent as if it had not submitted any Shop Drawings or details.
- J. Submission of Shop Drawings (in either original submission or when resubmitted with correction) constitutes evidence that Contractor has checked all information thereon and that it accepts and is willing to perform Work as shown.
- K. Contractor shall pay for cost of any changes in construction due to improper checking and coordination. Contractor shall be responsible for all additional costs, including coordination. Contractor shall be responsible for costs incurred by itself, the District, the Architect, the Project Inspector, the Construction Manager, any other Subcontractor or contractor, etc., due to improperly checked and/or coordination of submittals.
- L. Shop Drawings must clearly delineate the following information:
 - (1) Project name and address.
 - (2) Specification number and description.
 - (3) Architect's name and project number.
 - (4) Shop Drawing title, number, date, and scale.
 - (5) Names of Contractor, Subcontractor(s) and fabricator.
 - (6) Working and erection dimensions.

- (7) Arrangements and sectional views.
 - (8) Necessary details, including complete information for making connections with other Work.
 - (9) Kinds of materials and finishes.
 - (10) Descriptive names of materials and equipment, classified item numbers, and locations at which materials or equipment are to be installed in the Work. Contractor shall use same reference identification(s) as shown on Contract Drawings.
- M. Contractor shall prepare composite drawings and installation layouts when required to solve tight field conditions.
- (1) Shop Drawings shall consist of dimensioned plans and elevations and must give complete information, particularly as to size and location of sleeves, inserts, attachments, openings, conduits, ducts, boxes, structural interferences, etc.
 - (2) Contractor shall coordinate these composite Shop Drawings and installation layouts in the field between itself and its Subcontractor(s) for proper relationship to the Work, the work of other trades, and the field conditions. The Contractor shall check and approve all submittal(s) before submitting them for final review.

1.04 PRODUCT DATA OR NON-REPRODUCIBLE SUBMITTALS:

- A. Contractor shall submit manufacturer's printed literature in original form. Any fading type of reproduction will not be accepted. Contract must submit a minimum of six (6) each, to the District. District shall return one (1) to the Contractor, who shall reproduce whatever additional copies it requires for distribution.
- B. Contractor shall submit six (6) copies of a complete list of all major items of mechanical, plumbing, and electrical equipment and materials in accordance with the approved Submittal Schedule, except as required earlier to comply with the approved Construction Schedule. Other items specified are to be submitted prior to commencing Work. Contractor shall submit items of like kind at one time in a neat and orderly manner. Partial lists will not be acceptable.
- C. Submittals shall include manufacturer's specifications, physical dimensions, and ratings of all equipment. Contractor shall furnish performance curves for all pumps and fans. Where printed literature describes items in addition to that item being submitted, submitted item shall be clearly marked on sheet and superfluous information shall be crossed out. If highlighting is used, Contractor shall mark all copies.
- D. Equipment submittals shall be complete and include space requirements, weight, electrical and mechanical requirements, performance data, and supplemental information that may be requested.

- E. Imported Materials Certification must be submitted at least ten (10) days before material is delivered.

1.05 SAMPLES:

- A. Contractor shall submit for approval Samples as required and within the time frame in the Contract Documents. Materials such as concrete, mortar, etc., which require on-site testing will be obtained from Project Site.
- B. Contractor shall submit four (4) samples except where greater or lesser number is specifically required by Contract Documents including, without limitation, the Specifications.
 - (1) Samples must be of sufficient size and quality to clearly illustrate functional characteristics, with integrally related parts and attachment devices.
 - (2) Samples must show full range of texture, color, and pattern.
- C. Contractor shall make all Submittals, unless it has authorized Subcontractor(s) to submit and Contractor has notified the District in writing to this effect.
- D. Samples to be shipped prepaid or hand-delivered to the District.
- E. Contractor shall mark samples to show name of Project, name of Contractor submitting, Contract number and segment of Work where representative Sample will be used, all applicable Specifications Sections and documents, Contract Drawing Number and detail, and ASTM or FS reference, if applicable.
- F. Contractor shall not deliver any material to Site prior to receipt of District's and/or Architect's completed written review and approval. Contractor shall furnish materials equal in every respect to approved Samples and execute Work in conformance therewith.
- G. District's and/or Architect's review, acceptance, and/or approval of Sample(s) will not preclude rejections of any material upon discovery of defects in same prior to final acceptance of completed Work.
- H. After a material has been approved, no change in brand or make will be permitted.
- I. Contractor shall prepare its Submittal Schedule and submit Samples of materials requiring laboratory tests to specified laboratory for testing not less than ninety (90) days before such materials are required to be used in Work.
- J. Samples which are rejected must be resubmitted promptly after notification of rejection and be marked "Resubmitted Sample" in addition to other information required.
- K. Field Samples and Mock-Ups are to be removed by Contractor at District's direction:

- (1) Size: As Specified.
- (2) Furnish catalog numbers and similar data, as requested.

1.06 REVIEW AND RESUBMISSION REQUIREMENTS:

- A. The District will arrange for review of Sample(s), Shop Drawing(s), Product Data, and other submittal(s) by appropriate reviewer and return to Contractor as provided below within twenty-one (21) days after receipt or within twenty-one (21) days after receipt of all related information necessary for such review, whichever is later.
- B. One (1) copy of product or materials data will be returned to Contractor with the review status.
- C. Samples to be incorporated into the Work will be returned to Contractor, together with a written notice designating the Sample with the appropriate review status and indicating errors discovered on review, if any. Other Samples will not be returned, but the same notice will be given with respect thereto, and that notice shall be considered a return of the Sample.
- D. Contractor shall revise and resubmit any Sample(s), Shop Drawing(s), Product Data, and other submittal(s) as required by the reviewer. Such resubmittals will be reviewed and returned in the same manner as original Sample(s), Shop Drawing(s), Product Data, and other submittal(s), within fourteen (14) days after receipt thereof or within fourteen (14) days after receipt of all related information necessary for such review. Such resubmittal shall not delay the Work.
- E. Contractor may proceed with any of the Work covered by Sample(s), Shop Drawing(s), Product Data, and other submittal(s) upon its return if designated as no exception taken, or revise as noted, provided the Contractor proceeds in accordance with the District and/or the Architect's notes and comments.
- F. Contractor shall not begin any of the work covered by a Sample(s), Shop Drawing(s), Product Data, and other submittal(s), designated as revise and resubmit or rejected, until a revision or correction thereof has been reviewed and returned to Contractor.
- G. Sample(s), Shop Drawing(s), Product Data, and other submittal(s) designated as revise and resubmit or rejected and requiring resubmittal, shall be revised or corrected and resubmitted to the District no later than fourteen (14) days or a shorter period as required to comply with the approved Construction Schedule, after its return to Contractor.
- H. Neither the review nor the lack of review of any Sample(s), Shop Drawing(s), Product Data, and other submittal(s) shall waive any of the requirements of the Contract Documents, or relieve Contractor of any obligation thereunder.
- I. District's and/or Architect's review of Shop Drawings does not relieve the Contractor of responsibility for any errors that may exist. Contractor is responsible for the dimensions and design of adequate connections and details and for satisfactory construction of all the Work.

PART 2 – PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

SITE STANDARDS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including without limitation, Site Access, Conditions, and Regulations;
- B. Special Conditions;
- C. Drug-Free Workplace Certification;
- D. Tobacco-Free Environment Certification;
- E. Criminal Background Investigation/Fingerprinting Certification;
- F. Temporary Facilities and Controls.

1.02 REQUIREMENTS OF THE DISTRICT:

- A. Drug-Free Schools and Safety Requirements:
 - (1) All school sites and other District Facilities have been declared "Drug-Free Zones." No drugs, alcohol and/or smoking are allowed at any time in any buildings and/or grounds on District property. No students, staff, visitors, or contractors are to use drugs on these sites.
 - (2) Smoking and the use of tobacco products by all persons is prohibited on or in District property. District property includes school buildings, school grounds, school-owned vehicles and vehicles owned by others while on District property. Contractor shall post: "Non-Smoking Area" in a highly visible location in each work area, staging area, and parking area. Contractor may designate a smoking area outside of District property within the public right-of-way, provided that this area remains quiet and unobtrusive to adjacent neighbors. This smoking area is to be kept clean at all times.
 - (3) Contractor shall ensure that no alcohol, firearms, weapons, or controlled substances enter or are used at the Site. Contractor shall immediately remove from the Site and terminate the employment of any employee(s) found in violation of this provision.
- B. Language: Profanity or other unacceptable and/or loud language will not be tolerated, "Cat calls" or other derogatory language toward students, staff, volunteers, parents or public will not be allowed.

- C. Disturbing the Peace (Noise and Lighting):
- (1) Contractor shall observe the noise ordinance of the Site at all times including, without limitation, all applicable local, city, and/or state laws, ordinances, and/or regulations regarding noise and allowable noise levels.
 - (2) The use of radios, etc., shall be controlled to keep all sound at a level that cannot be heard beyond the immediate area of use. District reserves the right to prohibit the use of radios at the Site, except for mobile phones or other handheld communication radios.
 - (3) If portable lights are used after dark, all light must be located so as not to direct light into neighboring property.
- D. Traffic:
- (1) Driving on the Premises shall be limited to periods when students and public are not present. If driving or deliveries must be made during the school hours, two (2) or more ground guides shall lead the vehicle across the area of travel. In no case shall driving take place across playgrounds or other pedestrian paths during recess, lunch, and/or class period changes. The speed limit on-the Premises shall be five (5) miles per hour (maximum) or less if conditions require.
 - (2) All paths of travel for deliveries, including without limitation, material, equipment, and supply deliveries, shall be reviewed and approved by District in advance. Any damage will be repaired to the pre-damaged condition by the Contractor.
 - (3) District shall designate a construction entry to the Site. If Contractor requests, District determines it is required, and to the extent possible, District shall designate a staging area so as not to interfere with the normal functioning of school facilities. Location of gates and fencing shall be approved in advance with District and at Contractor's expense.
 - (4) Parking areas shall be reviewed and approved by District in advance. No parking is to occur under the drip line of trees or in softscape areas that could otherwise be damaged.
- E. All of the above shall be observed and complied with by the Contractor and all workers on the Site. Failure to follow these directives could result in individual(s) being suspended or removed from the work force at the discretion of the District. The same rules and regulations shall apply equally to delivery personnel, inspectors, consultants, and other visitors to the Site.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Obtaining of Permits, Licenses and Registrations and Work to Comply with All Applicable Laws and Regulations;
- B. Special Conditions; and
- C. Quality Control.

1.02 DESCRIPTION:

This section covers the general requirements for regulatory requirements pertaining to the Work and is supplementary to all other regulatory requirements mentioned or referenced elsewhere in the Contract Documents.

1.03 REQUIREMENTS OF REGULATORY AGENCIES:

- A. All statutes, ordinances, laws, rules, codes, regulations, standards, and the lawful orders of all public authorities having jurisdiction over the Work, are hereby incorporated into these Contract Documents as if repeated in full herein and are intended to be included in any reference to Code or Building Code, unless otherwise specified, including, without limitation, the references in the list below. Contractor shall make available at the Site copies of all the listed documents applicable to the Work as the District and/or Architect may request, including, without limitation, applicable portions of the California Code of Regulations ("CCR").
 - (1) California Building Standards Administrative Code, Part 1, Title 24, CCR.
 - (2) California Building Code (CBC), Part 2, Title 24, CCR; (International Building Code volumes 1-2 and California Amendments).
 - (3) California Electrical Code (CEC), Part 3, Title 24, CCR; (National Electrical Code and California Amendments).
 - (4) California Mechanical Code (CMC), Part 4, Title 24, CCR; (Uniform Mechanical Code and California Amendments).
 - (5) California Plumbing Code (CPC), Part 5, Title 24, CCR; (Uniform Plumbing Code and California Amendments).

- (6) California Fire Code (CFC), Part 9, Title 24, CCR; (International Fire Code and California Amendments).
- (7) California Green Building Standards Code (CALGreen), Part 11, Title 24, CCR.
- (8) California Referenced Standards Code, Part 12, Title 24, CCR.
- (9) State Fire Marshal Regulations, Public Safety, Title 19, CCR.
- (10) Partial List of Applicable National Fire Protection Association (NFPA) Standards:
 - (a) NFPA 13 - Automatic Sprinkler System.
 - (b) NFPA 14 - Standpipes Systems.
 - (c) NFPA 17A - Wet Chemical System
 - (d) NFPA 24 - Private Fire Mains.
 - (e) (California Amended) NFPA 72 - National Fire Alarm Codes.
 - (f) NFPA 253 - Critical Radiant Flux of Floor Covering System.
 - (g) NFPA 2001 - Clean Agent Fire Extinguishing Systems.
- (11) California Division of the State Architect interpretation of Regulations ("DSA IR"), including, without limitation:
 - (a) DSA IR A-6 — Construction Change Document Submittal and Approval Processes.
 - (b) DSA IR A-7 — Project Inspector Certification and Approval.
 - (c) DSA IR A-8 — Project Inspector and Assistant Inspector Duties and Performance.
 - (d) DSA IR A-12 — Assistant Inspector Approval.
- (12) DSA Procedures ("DSA PR")
 - (a) DSA PR 13-01 – Construction Oversight Process
 - (b) DSA PR 13-02 – Project Certification Process

B. This Project shall be governed by applicable regulations, including, without limitation, the State of California's Administrative Regulations for the Division of the State Architect-Structural Safety (DSA/SS), Chapter 4, Part 1, Title 24, CCR, and the most current version on the date the bids are opened and as it pertains to school construction including, without limitation:

- (1) Test and testing laboratory per Section 4-335. District shall pay for the testing laboratory.
- (2) Special inspections per Section 4-333(c).
- (3) Deferred Approvals per section 4-317(g).
- (4) Verified reports per Sections 4-336 & 4-343(c).
- (5) Duties of the Architect & Engineers shall be per Sections 4-333(a) and 4-341.
- (6) Duties of the Contractor shall be per Section 4-343.
- (7) Duties of Project Inspector shall be per Section 4-334.
- (8) Addenda and Construction Change Documents per Section 4-338.

Contractor shall keep and make available all applicable parts of the most current version of Title 24 referred to in the plans and specifications at the Site during construction.

C. Items of deferred approval shall be clearly marked on the first sheet of the Architect's and/or Engineer's approved Drawings. All items later submitted for approval shall be per Title 24 requirements to the DSA.

- (1) Contractor shall submit the following to Architect for review and endorsement:
 - (a) Product information on proposed material/system supplier.
 - (b) Drawings, specifications, and calculations prepared, signed, and stamped by an architect or engineer licensed in the State of California for that portion of the Work.
 - (c) All other requirements as may be required by DSA.
- (2) Cost of preparing and submitting documentation per DSA Deferred Approval requirements including required modifications to Drawings and Specifications, whether or not indicated in the Contract Documents, shall be borne by Contractor.
- (3) Contractor shall not begin fabrication and installation of deferred approval items without first obtaining DSA approval of Drawings and Specifications.
- (4) Schedule of Work Subject to DSA Deferred Approval: Window wall systems exceeding 10 feet in span.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Obtaining of Permits, Licenses and Registrations and Work to Comply with All Applicable Laws and Regulations;
- B. Special Conditions; and
- C. Quality Control.

1.02 DESCRIPTION:

This section covers the general requirements for regulatory requirements pertaining to the Work and is supplementary to all other regulatory requirements mentioned or referenced elsewhere in the Contract Documents.

1.03 REQUIREMENTS OF REGULATORY AGENCIES:

- A. All statutes, ordinances, laws, rules, codes, regulations, standards, and the lawful orders of all public authorities having jurisdiction over the Work, are hereby incorporated into these Contract Documents as if repeated in full herein and are intended to be included in any reference to Code or Building Code, unless otherwise specified, including, without limitation, the references in the list below. Contractor shall make available at the Site copies of all the listed documents applicable to the Work as the District and/or Architect may request, including, without limitation, applicable portions of the California Code of Regulations ("CCR").
 - (1) California Building Standards Administrative Code, Part 1, Title 24, CCR.
 - (2) California Building Code (CBC), Part 2, Title 24, CCR; (International Building Code volumes 1-2 and California Amendments).
 - (3) California Electrical Code (CEC), Part 3, Title 24, CCR; (National Electrical Code and California Amendments).
 - (4) California Mechanical Code (CMC), Part 4, Title 24, CCR; (Uniform Mechanical Code and California Amendments).
 - (5) California Plumbing Code (CPC), Part 5, Title 24, CCR; (Uniform Plumbing Code and California Amendments).

- (6) California Fire Code (CFC), Part 9, Title 24, CCR; (International Fire Code and California Amendments).
- (7) California Green Building Standards Code (CALGreen), Part 11, Title 24, CCR.
- (8) California Referenced Standards Code, Part 12, Title 24, CCR.
- (9) State Fire Marshal Regulations, Public Safety, Title 19, CCR.
- (10) Partial List of Applicable National Fire Protection Association (NFPA) Standards:
 - (a) NFPA 13 - Automatic Sprinkler System.
 - (b) NFPA 14 - Standpipes Systems.
 - (c) NFPA 17A - Wet Chemical System
 - (d) NFPA 24 - Private Fire Mains.
 - (e) (California Amended) NFPA 72 - National Fire Alarm Codes.
 - (f) NFPA 253 - Critical Radiant Flux of Floor Covering System.
 - (g) NFPA 2001 - Clean Agent Fire Extinguishing Systems.
- (11) California Division of the State Architect interpretation of Regulations ("DSA IR"), including, without limitation:
 - (a) DSA IR A-6 — Construction Change Document Submittal and Approval Processes.
 - (b) DSA IR A-7 — Project Inspector Certification and Approval.
 - (c) DSA IR A-8 — Project Inspector and Assistant Inspector Duties and Performance.
 - (d) DSA IR A-12 — Assistant Inspector Approval.
- (12) DSA Procedures ("DSA PR")
 - (a) DSA PR 13-01 – Construction Oversight Process
 - (b) DSA PR 13-02 – Project Certification Process

B. This Project shall be governed by applicable regulations, including, without limitation, the State of California's Administrative Regulations for the Division of the State Architect-Structural Safety (DSA/SS), Chapter 4, Part 1, Title 24, CCR, and the most current version on the date the bids are opened and as it pertains to school construction including, without limitation:

- (1) Test and testing laboratory per Section 4-335. District shall pay for the testing laboratory.
- (2) Special inspections per Section 4-333(c).
- (3) Deferred Approvals per section 4-317(g).
- (4) Verified reports per Sections 4-336 & 4-343(c).
- (5) Duties of the Architect & Engineers shall be per Sections 4-333(a) and 4-341.
- (6) Duties of the Contractor shall be per Section 4-343.
- (7) Duties of Project Inspector shall be per Section 4-334.
- (8) Addenda and Construction Change Documents per Section 4-338.

Contractor shall keep and make available all applicable parts of the most current version of Title 24 referred to in the plans and specifications at the Site during construction.

C. Items of deferred approval shall be clearly marked on the first sheet of the Architect's and/or Engineer's approved Drawings. All items later submitted for approval shall be per Title 24 requirements to the DSA.

- (1) Contractor shall submit the following to Architect for review and endorsement:
 - (a) Product information on proposed material/system supplier.
 - (b) Drawings, specifications, and calculations prepared, signed, and stamped by an architect or engineer licensed in the State of California for that portion of the Work.
 - (c) All other requirements as may be required by DSA.
- (2) Cost of preparing and submitting documentation per DSA Deferred Approval requirements including required modifications to Drawings and Specifications, whether or not indicated in the Contract Documents, shall be borne by Contractor.
- (3) Contractor shall not begin fabrication and installation of deferred approval items without first obtaining DSA approval of Drawings and Specifications.
- (4) Schedule of Work Subject to DSA Deferred Approval: Window wall systems exceeding 10 feet in span.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

ABBREVIATIONS AND ACRONYMS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions including without limitation, Definitions;
- B. Special Conditions.

1.02 DOCUMENT INCLUDES:

- A. Abbreviations used throughout the Contract Documents.
- B. Reference to a technical society, organization, or body is by abbreviation, as follows:

1.	AA	The Aluminum Association
2.	AASHTO	American Association of State Highway and Transportation Officials
3.	ABPA	Acoustical and Board Products Association
4.	ACI	American Concrete Institute
5.	AGA	American Gas Association
6.	AGC	Associated General Contractors of America
7.	AHC	Architectural Hardware Consultant
8.	AHRI	Air Conditioning, Heating, Refrigeration Institute
9.	AI	Asphalt Institute
10.	AIA	American Institute of Architects
11.	AISC	American Institute of Steel Construction
12.	AISI	American Iron and Steel Institute
13.	AMCA	Air Movement and Control Association
14.	ANSI	American National Standards Institute
15.	APA	APA – The Engineered Wood Association
16.	ASCE	American Society of Civil Engineers
17.	ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
18.	ASME	American Society of Mechanical Engineers
19.	ASTM	American Society of Testing and Materials International
20.	AWPA	American Wood Protection Association
21.	AWPI	American Wood Preservers Institute
22.	AWS	American Welding Society
23.	AWSC	American Welding Society Code
24.	AWI	Architectural Woodwork Institute
25.	AWWA	American Water Works Association
26.	BIA	The Brick Industry Association

27.	CCR	California Code of Regulations
28.	CLFMI	Chain Link Fence Manufacturers Institute
29.	CRA	California Redwood Association
30.	CRSI	Concrete Reinforcing Steel Institute
31.	CS	Commercial Standards
32.	CSI	Construction Specifications Institute
33.	CTI	Cooling Technology Institute
34.	FGIA	Fenestration and Glazing Industry Alliance
35.	FGMA	Flat Glass Manufacturers' Association
36.	FIA	Factory Insurance Association
37.	FM	Factory Mutual Global
38.	FS/FED SPEC	Federal Specification
39.	FTI	Facing Title Institute
40.	GA	Gypsum Association
41.	IAPMO	International Association of Plumbing and Mechanical Officials
42.	ICC	International Code Council
43.	IEEE	Institute of Electrical and Electronics Engineers
44.	IES	Illuminating Engineering Society
45.	MCAC	Mason Contractors Association of California
46.	MIMA	Mineral Wool Insulation Manufacturers Association
47.	MLMA	Metal Lath Manufacturers Association
48.	MS/MIL SPEC	Military Specifications
49.	NAAMM	National Association of Architectural Metal Manufacturers
50.	NBHA	National Builders Hardware Association
51.	NCMA	National Concrete Masonry Association
52.	NCSEA	National Council of Structural Engineers Associations
53.	NEC	National Electrical Code
54.	NEMA	National Electrical Manufacturers Association
55.	NIST	National Institute of Standards and Technology
56.	NSI	Natural Stone Institute
57.	NTMA	National Terrazzo and Mosaic Association, Inc.
58.	ORS	Office of Regulatory Services (California)
59.	OSHA	Occupational Safety and Health Act
60.	PCI	Precast/Prestressed Concrete Institute
61.	PCA	Portland Cement Association
62.	PCA	Painting Contractors Association
63.	PDI	Plumbing Drainage Institute
64.	PEI	Porcelain Enamel Institute, Inc.
65.	PG&E	Pacific Gas & Electric Company
66.	PS	Product Standards
67.	SDI	Steel Door Institute; Steel Deck Institute
68.	SJI	Steel Joist Institute
69.	SSPC	Society for Protective Coatings
70.	TCNA	Tile Council of North America, Inc.
71.	TPI	Truss Plate Institute
72.	UBC	Uniform Building Code
73.	UL	Underwriters Laboratories Code

74.	UMC	Uniform Mechanical Code
75.	USDA	United States Department of Agriculture
76.	VI	Vermiculite Institute
77.	WCLIB	West Coast Lumber Inspection Bureau
78.	WDMA	Window and Door Manufacturers Association
79.	WEUSER	Western Electric Utilities Service Engineering Requirements
80.	WIC	Woodwork Institute of California

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

DEFINITIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions including without limitation, Definitions;
- B. Special Conditions.

1.02 QUALITY ASSURANCE

- A. For products or workmanship specified by association, trade, or Federal Standards, Contractor shall comply with requirements of the standard, except when more rigid requirements are specified in the Contract Documents, or are required by applicable codes.
- B. Contractor shall conform to current reference standard publication date in effect on the date of bid opening.
- C. Contractor shall obtain copies of standards unless specifically required not to by the Contract Documents.
- D. Contractor shall maintain a copy of all standards at jobsite during submittals, planning, and progress of the specific Work, until final completion, unless specifically required not to by the Contract Documents.
- E. Should specified reference standards conflict with Contract Documents, Contractor shall request clarification from the District and/or the Architect before proceeding.
- F. The contractual relationship of the parties to the Contract shall not be altered from the contractual relationship as indicated in the Contract Documents by mention or inference otherwise in any referenced document.
- G. Governing Codes shall be as shown in the Contract Documents including, without limitation, the Specifications.

END OF DOCUMENT

REFERENCES**PART 1 - GENERAL****1.01 SCHEDULE OF REFERENCES:**

The following information is intended only for the general assistance of the Contractor, and the District does not represent that all of the information is current. It is the Contractor's responsibility to verify the correct information for each of the entities listed.

AA	The Aluminum Association 1400 Crystal Drive, Suite 430 Arlington, VA 22202 www.aluminum.org	703/358-2960
AABC	Associated Air Balance Council 2401 Pennsylvania Avenue NW, Suite 330 Washington, DC 20037 www.aabc.com	202/737-0202
AASHTO	American Association of State Highway and Transportation Officials 555 12th St. NW - Suite 1000 Washington, DC 20004 www.transportation.org	202/624-5800
AATCC	American Association of Textile Chemists and Colorists P.O. Box 12215 Research Triangle Park, NC 27709-2215 www.aatcc.org	919/549-8141
ACA	American Coatings Association 901 New York Ave., NW, Suite 300 West Washington, DC 20001 www.paint.org	202/462-6272
ACI	American Concrete Institute 38800 Country Club Dr. Farmington Hills, MI 48331-3439 www.concrete.org	248/848-3800
ACPA	American Concrete Pipe Association 5605 N. MacArthur Blvd., Suite 340 Irving, TX 75038 www.concrete-pipe.org	972/506-7216

ADC	Air Duct Council 1901 N. Roselle Road, Suite 800 Schaumburg, IL 60195 www.flexibleduct.org	847/706-6750
AF&PA	American Forest and Paper Association 1101 K Street, NW, Suite 700 Washington, DC 20005 www.afandpa.org	202/463-2700
AGA	American Gas Association 400 North Capitol Street, NW, Suite 450 Washington, DC 20001 www.aga.org	202/824-7000
AGC	Associate General Contractors of America 2300 Wilson Blvd., Suite 300 Arlington, VA 22201 www.agc.org	703/548-3118
AHA	American Hardboard Association 1210 West Northwest Highway Palatine, IL 60067 http://domensino.com/AHA/default.htm	847/934-8800
AI	Asphalt Institute 2696 Research Park Drive Lexington, KY 40511-8480 www.asphaltinstitute.org	859/288-4960
AIA	The American Institute of Architects 1735 New York Ave., NW Washington, DC 20006-5292 www.aia.org	202/626-7300
AISC	American Institute of Steel Construction 130 East Randolph Street, Suite 2000 Chicago, IL 60601 www.aisc.org	312.670.2400
AISI	American Iron and Steel Institute 25 Massachusetts Ave., NW, Suite 800 Washington, DC 20001 www.steel.org	202/452-7100
AITC	American Institute of Timber Construction 1010 South 336th Street, #210 Federal Way, WA 98003-7394 https://www.plib.org/aitc/	253/835-3344

ALI	Associated Laboratories, Inc. P.O. Box 152837 Dallas, TX 75315 www.assoc-labs.com	214/565-0593
ALSC	American Lumber Standards Committee, Inc. 7470 New Technology Way, Suite F Frederick, MD 21703 www.alsc.org	301/972-1700
AMCA	Air Movement and Control Association International, Inc. 30 W. University Drive Arlington Heights, IL 60004 www.amca.org	847/394-0150
AMPP (formerly SSPC)	Association for Materials Protection and Performance (merger of Society for Protective Coatings and National Association of Corrosion Engineers International) (formerly Steel Structures Painting Council) 800 Trumbull Drive Pittsburgh, PA 15205 www.sspc.org	412/281-2331 877/281-7772
ANLA	AmericanHort (merger of American Nursery & Landscape Association and OFA – The Association of Horticultural Professionals) 2130 Stella Court Columbus, OH 43215 www.americanhort.org	614/487-1117
ANSI	American National Standards Institute 1899 L Street, NW, 11th Floor Washington, DC 20036 www.ansi.org	202/293-8020
APA	APA-The Engineered Wood Association 7011 S. 19th Street Tacoma, WA 98466-5333 www.apawood.org	253/565-6600

APA	Architectural Precast Association 325 John Knox Rd, Suite L-103 Tallahassee, FL 32303 www.archprecast.org	850/205-5637
APCIA	American Property Casualty Insurance Association (merger of American Insurance Association (formerly the National Board of Fire Underwriters) with the Property Casualty Insurers Association of America) 555 12th St, NW, Suite 550 Washington DC 20004 www.apci.org	202/828-7100
AHRI	Air Conditioning and Refrigeration Institute (now Air- Conditioning, Heating, & Refrigeration Institute) 2311 Wilson Blvd, Suite 400 Arlington, VA 22201 www.ahrinet.org	703/524-8800
ARMA	Asphalt Roofing Manufacturers Association 2331 Rock Spring Road Forest Hill, MD 21050 www.asphaltroofing.org	443/640-1075
ASA	The Acoustical Society of America Suite 300 1305 Walt Whitman Road Melville, NY 11747-4300 https://acousticalsociety.org/	516/576-2360
ASCE	American Society of Civil Engineers 1801 Alexander Bell Drive Reston, VA 20191 www.asce.org	800/548-2723 703/295-6300
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers 180 Technology Parkway Peachtree Corners, GA 30092 www.ashrae.org	800/527-4723 404/636-8400
ASLA	American Society of Landscape Architects 636 Eye Street, NW Washington, DC 20001-3736 www.asla.org	202/898-2444
ASME	American Society of Mechanical Engineers Two Park Avenue New York, NY 10016-5990 www.asme.org	800/834-2763

ASPE	American Society of Plumbing Engineers 6400 Shafer Court, Suite 350 Rosemont, IL 60018 http://aspe.org	847/296-0002
ASQ	American Society for Quality P.O. Box 3005 Milwaukee, WI 53201-3005 or 600 North Plankinton Avenue Milwaukee, WI 53203 http://asq.org	800/248-1946 414/272-8575
ASSE	American Society of Sanitary Engineering 18927 Hickory Creek Dr., Suite 220 Mokena, IL 60448 www.asse-plumbing.org	708/995-3019
ASTM	ASTM International 100 Barr Harbor Drive PO Box C700 West Conshohocken, PA, 19428-2959 www.astm.org	610/832-9500
AWCI	Association of the Wall and Ceiling Industry 513 West Broad Street, Suite 210 Falls Church, VA 22046 www.awci.org	703/538-1600
AWPA	American Wood Protection Association (formerly American Wood Preservers Institute) P.O. Box 361784 Birmingham, AL 35236-1784 www.awpa.com	205/733-4077
AWS	American Welding Society 8669 NW 36 Street, Suite 130 Miami, FL 33166 www.aws.org	800/443-9353 305/443-9353
AWI	Architectural Woodwork Institute 46179 Westlake Drive, Suite 120 Potomac Falls, VA 20165-5874 www.awinet.org	571/323-3636
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235 www.awwa.org	800/926-7337 303/794-7711

BHMA	Builders Hardware Manufacturers Association 355 Lexington Avenue, 15th Floor New York, NY 10017 www.buildershardware.com	212/297-2122
BIA	The Brick Industry Association 12007 Sunrise Valley Drive, Suite 430 Reston, VA 20191 www.gobrick.com	703/620-0010
CGA	Compressed Gas Association 8484 Westpark Drive, Suite 220 McLean, VA 22102 www.cganet.com	703/788-2700
CISCA	Ceilings & Interior Systems Construction Association 1010 Jorie Blvd, Suite 30 Oak Brook, IL 60523 www.cisca.org	630/584-1919
CISPI	Cast Iron Soil Pipe Institute 2401 Fieldcrest Dr. Mundelein, IL 60060 www.cispi.org	224/864-2910
CLFMI	Chain Link Fence Manufacturers Institute 10015 Old Columbia Road, Suite B-215 Columbia, MD 21046 chainlinkinfo.org	301/596-2583
CPA	Composite Panel Association 19465 Deerfield Avenue, Suite 306 Leesburg, VA 20176 www.compositepanel.org	703/724-1128
CPSC	Consumer Product Safety Commission 4330 East-West Highway Bethesda, MD 20814 www.cpsc.gov	800/638-2772
CRA	California Redwood Association 818 Grayson Road, Suite 201 Pleasant Hill, CA 94523 www.calredwood.org	925/935-1499

CRI	Carpet and Rug Institute 100 S. Hamilton Street Dalton, GA 30722-2048 www.carpet-rug.org	706/278-3176
CRSI	Concrete Reinforcing Steel Institute 933 N. Plum Grove Road Schaumburg, IL 60173-4758 www.crsi.org	847/517-1200
CSI	The Construction Specifications Institute 123 North Pitt St, Suite 450 Alexandria, VA 22314 www.csinet.org	800/689-2900
CTIOA	Ceramic Tile Institute of America 12061 Jefferson Blvd. Culver City, CA 90230-6219 www.ctioa.org	310/574-7800
DHA	Decorative Hardwoods Association (formerly Hardwood Plywood & Veneer Association) 42777 Trade West Dr. Sterling, VA 20166 https://www.decorativehardwoods.org/	703/435-2900
DHI	Door and Hardware Institute (formerly National Builders Hardware Association) 2001 K Street NW, 3rd Floor North Washington, DC 20006 www.dhi.org	202/367-1134
DIPRA	Ductile Iron Pipe Research Association P.O. Box 190306 Birmingham, AL 35219 www.dipra.org	205/402-8700
DOC	U.S. Department of Commerce 1401 Constitution Ave., NW Washington, DC 20230 www.commerce.gov	202/482-2000
DOT	U.S. Department of Transportation 1200 New Jersey Avenue, SE Washington, DC 20590 www.dot.gov	855/368-4200
EJMA	Expansion Joint Manufacturers Association, Inc. 25 North Broadway Tarrytown, NY 10591 www.ejma.org	914/332-0040

EPA	Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N.W. Washington, DC 20460 www.epa.gov	202/272-0167
FCICA	Floor Covering Installation Contractors Association 800 Roosevelt Rd., Bldg. C, Suite 312 Glen Ellyn, IL 60137 www.fcica.com	630/672-3702
FGIA	Fenestration and Glazing Industry Alliance 1900 E Golf Rd, Suite 1250 Schaumburg, IL 60173 https://fgiaonline.org/	847/303-5664
FM Global	Factory Mutual Insurance Company Amy Daley Global Practice Leader – Education, Public Entities, Health Care FM Global 270 Central Avenue Johnston, RI 02919-4949 www.fmglobal.com	401/275-3000 401/275-3029
FS	General Services Administration (GSA) Index of Federal Specifications, Standards and Commercial Item Descriptions 470 East L'Enfant Plaza, SW, Suite 8100 Washington, DC 20407 www.gsa.gov	202/619-8925
GA	The Gypsum Association 962 Wayne Ave., Suite 620 Silver Spring, MD 20910 www.gypsum.org	301/277-8686
HMA	Hardwood Manufacturers Association One Williamsburg Place, Suite 108 Warrendale, PA 15086 http://hmamembers.org	412/244-0440

IAPMO	International Association of Plumbing and Mechanical Officials (formerly the Western Plumbing Officials Association) 4755 E. Philadelphia St. Ontario, CA 91761 www.iapmo.org	909/472-4100
ICC	International Code Council 500 New Jersey Avenue, NW, 6th Floor Washington, DC 20001 www.iccsafe.org	888/422-7233
IEEE	Institute of Electrical and Electronics Engineers 3 Park Avenue, 17th Floor New York, NY 10016-5997 www.ieee.org	212/419-7900
IES	Illuminating Engineering Society 120 Wall Street, Floor 17 New York, NY 10005-4001 www.ies.org	212/248-5000
ITRK	Intertek Testing Services 3933 US Route 11 Cortland, NY 13045 www.intertek.com	607/753-6711
MCAA	Mechanical Contractors Association of America 1385 Piccard Drive Rockville, MD 20850 www.mcaa.org	301/869-5800
MMPA (formerly WMMPA)	Moulding & Millwork Producers Association (formerly Wood Moulding & Millwork Producers Association) 507 First Street Woodland, CA 95695 www.wmmpa.com	530/661-9591 800/550-7889
MSS	Manufacturers Standardization Society (MSS) of the Valve and Fittings Industry, Inc. 127 Park Street, NE Vienna, VA 22180-4602 http://mss-hq.org	703/281-6613
NAAMM	National Association of Architectural Metal Manufacturers 800 Roosevelt Rd. Bldg. C, Suite 312 Glen Ellyn, IL 60137 www.naamm.org	630/942-6591

NAIMA	North American Insulation Manufacturers Association P.O. Box 1906 Alexandria, VA 22313 https://insulationinstitute.org/	703/684-0084
NALP	National Association of Landscape Professionals (formerly Professional Landcare Network) 12500 Fair Lakes Circle, Suite 200 Fairfax, VA 22033 https://www.landscapeprofessionals.org/	703/736-9666
NAPA	National Asphalt Pavement Association 6406 Ivy Lane, Suite 350 Greenbelt, MD 20770-1441 www.asphaltpavement.org	888/468-6499 301/731-4748
NCSPA	National Corrugated Steel Pipe Association 14070 Proton Road, Suite 100 Dallas, TX 75244 www.ncspa.org	972/850-1907
NCMA	National Concrete Masonry Association 13750 Sunrise Valley Drive Herndon, VA 20171-4662 www.ncma.org	703/713-1900
NEBB	National Environmental Balancing Bureau 8575 Grovemont Circle Gaithersburg, MD 20877 www.nebb.org	301/977-3698
NECA	National Electrical Contractors Association 1201 Pennsylvania Ave. NW Washington, D.C., 20004 www.necanet.org	202/991-6300
NEMA	National Electrical Manufacturers Association 1300 North 17th Street N, Suite 900 Rosslyn, VA 22209 www.nema.org	703/841-3200
NEII	National Elevator Industry, Inc. 5537 SW Urish Road Topeka, KS 66610 https://nationalelevatorindustry.org/	703/589-9985
NFPA	National Fire Protection Association 1 Batterymarch Park Quincy, MA 02169-7471 www.nfpa.org	800/344-3555 855/274-8525

NGA (formerly GANA)	National Glass Association (merged with Glass Association of North America) 1945 Old Gallows Road Suite 750 Vienna, VA 22182 www.glass.org	866/342-5642 Ext 127
NHLA	National Hardwood Lumber Association PO Box 34518 Memphis, TN 38184 www.nhla.com	901/377-1818
NIA	National Insulation Association 516 Herndon Pkwy., Ste. D Herndon, VA 20170 www.insulation.org	703/464-6422
NRCA	National Roofing Contractors Association 10255 W. Higgins Road, Suite 600 Rosemont, IL 60018-5607 www.nrca.net	847/299-9070
NSF	NSF International 789 N. Dixboro Road Ann Arbor, MI 48113-0140 www.nsf.org	800/673-6275 734/769-8010
NSI	Natural Stone Institute (formerly Marble Institute of America) 380 E. Lorain St. Oberlin, OH 44074 https://www.naturalstoneinstitute.org/	440/250-9222
NTMA	National Terrazzo and Mosaic Association 209 N. Crockett Street, Suite 2 PO Box 2605 Fredericksburg, TX 78624 www.ntma.com	800/323-9736
OSHA	Occupational Safety and Health Act U.S. Department of Labor Occupational Safety & Health Administration 200 Constitution Ave., NW Washington, DC 20210 www.osha.gov	800/321-OSHA (6742)

PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 60077 or 200 Massachusetts Ave NW, Suite 200 Washington, DC 20001 www.cement.org	847/966-6200 202/408-9494
PCA	Painting Contractors Association (formerly Painting and Decorating Contractors of America) 2316 Millpark Drive Maryland Heights, MO 63043 https://www.pcapainted.org/	800/322-7322
PCI	Precast/Prestressed Concrete Institute 8770 W. Bryn Mawr Ave., Suite 1150 Chicago, IL 60631 www.pci.org	312/786-0300
PDI	Plumbing & Drainage Institute 800 Turnpike Street, Suite 300 North Andover, MA 01845 http://pdionline.org	978/557-0720 800/589-8956
PEI	Porcelain Enamel Institute, Inc. P.O. Box 920220 Norcross, GA 30010 www.porcelainenamel.com	770/676-9366
PG&E	Pacific Gas & Electric Company P.O. Box 997300 Sacramento, CA 95899-7300 www.pge.com	800/743-5000
PLIB	Pacific Lumber Inspection Bureau (formerly West Coast Lumber Inspection Bureau) 1010 South 336th Street, Suite 210 Federal Way, WA 98003-7394 https://www.plib.org/	253/835-3344
RFCI	Resilient Floor Covering Institute 115 Broad Street, Suite 201 La Grange, GA 30240 www.rfci.com	706/882-3833
SDI	Steel Deck Institute P.O. Box 426 Glenshaw, PA 15116 www.sdi.org	412/487-3325

SDI	Steel Door Institute 30200 Detroit Road Westlake, OH 44145 www.steeldoor.org	440/899-0010
SJI	Steel Joist Institute 140 West Evans Street, Suite 203 Florence, SC 29501 http://steeljoist.org	843/407-4091
SMA	Stucco Manufacturers Association 5753 E Santa Ana Cyn Rd, #G-156 Anaheim, CA 92807 www.stuccomfgassoc.com	714/473-9579
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association 4201 Lafayette Center Drive Chantilly, VA 20151-1219 www.smacna.org	703/803-2980
SPI	SPI: The Plastics Industry Trade Association, Inc. 1425 K St. NW, Suite 500 Washington, DC 20005 www.plasticsindustry.org	202/974-5200
TCA	The Tile Council of North America 100 Clemson Research Blvd. Anderson, SC 29625 www.tcnatile.com	864/646-8453
TPI	Truss Plate Institute 2670 Crain Highway, Suite 203 Waldorf, MD 20601 www.tpinst.org	240/587-5582
TPI	Turfgrass Producers International 444 E. Roosevelt Road #346 Lombard, IL 60148 www.turfgrassod.org	800/405-8873 847/649-5555
TCIA	Tree Care Industry Association (formerly the National Arborist Association) 670 N Commercial Street, Suite 201 Manchester, NH 03101 www.tcia.org	603/314-5380 800/733-2622

TVI	The Vermiculite Institute c/o The Schundler Company 10 Central Street Nahant, MA 01908 www.vermiculiteinstitute.org	732/287-2244
UL	Underwriters Laboratories Inc. 333 Pfingsten Road Northbrook, IL 60062-2096 www.ul.com	847/272-8800 877/854-3577
UNI	Uni-Bell PVC Pipe Association 201 E. John Carpenter Freeway, Suite 750 Irving, TX 75062 www.uni-bell.org	972/243-3902
USDA	U.S. Department of Agriculture 1400 Independence Ave., S.W. Washington, DC 20250 www.usda.gov	202/720-2791
WA	Wallcoverings Association 35 E Wacker Dr., Suite 850 Chicago, IL 60601 www.wallcoverings.org	312/224-2574
WCMA	Window Covering Manufacturers Association 355 Lexington Avenue 15th Floor New York, NY 10017 www.wcmanet.org	212/297-2122
WDMA	Window & Door Manufacturers Association 2001 K Street NW, 3rd Floor North Washington, D.C. 20006 www.wdma.com	202/367-1157
WI	Woodwork Institute 1455 Response Road, Suite 110 Sacramento, CA 95815 www.wicnet.org	916/372-9943
WRI	Wire Reinforcement Institute 942 Main Street, Suite 300 Hartford, CT 06103 www.wirereinforcementinstitute.org	860/240-9545
WWCA	Western Wall & Ceiling Contractors Association 1910 N. Lime St. Orange, CA 92865 www.wwcca.org	714/221-5520

WWPA	Western Wood Products Association (formerly Redwood Inspection Service) 1500 SW First Ave., Suite 870 Portland, OR 97201 www.wwpa.org	503/224-3930
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PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Purchase of Materials and Equipment;
- B. Special Conditions;
- C. Imported Materials Certification.

1.02 MATERIAL AND EQUIPMENT

- A. Only items approved by the District and/or Design Professional shall be used.
- B. Contractor shall submit lists of products and other product information in accordance with the Contract Documents, including, without limitation, the provisions regarding the submittals.

1.03 MATERIAL AND EQUIPMENT COLORS

- A. The District and/or Architect will provide a schedule of colors.
- B. No individual color selections will be made until after approval of all pertinent materials and equipment and after receipt of appropriate samples in accordance with the Contract Documents, including, without limitation, the provisions regarding the submittals.
- C. Contractor shall request priority in writing for any item requiring advance ordering to maintain the approved Construction Schedule.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Contractor shall deliver manufactured materials in original packages, containers, or bundles (with seals unbroken), bearing name or identification mark of manufacturer.
- B. Contractor shall deliver fabrications in as large assemblies as practicable; where specified as shop-primed or shop-finished, package or crate as required to preserve such priming or finish intact and free from abrasion.
- C. Contractor shall store materials in such a manner as necessary to properly protect them from damage. Materials or equipment damaged by handling, weather, dirt, or from any other cause will not be accepted.

- D. Materials are not acceptable that have been warehoused for long periods of time, stored or transported in improper environment, improperly packaged, inadequately labeled, poorly protected, excessively shipped, deviated from normal distribution pattern, or reassembled.
- E. Contractor shall store material so as to cause no obstructions of sidewalks, roadways, access to the Site or buildings, and underground services. Contractor shall protect material and equipment furnished under Contract.
- F. Contractor may store materials on Site with prior written approval by the District, all material shall remain under Contractor's control and Contractor shall remain liable for any damage to the materials. Should the Project Site not have storage area available, the Contractor shall provide for off-site storage at a bonded warehouse and with appropriate insurance coverage at no cost to District.
- G. When any room in Project is used as a shop or storeroom, the Contractor shall be responsible for any repairs, patching, or cleaning necessary due to that use. Location of storage space shall be subject to prior written approval by District.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers listed in various sections of Contract Documents are names of those manufacturers that are believed to be capable of supplying one or more of items specified therein.
- B. The listing of a manufacturer does not imply that every product of that manufacturer is acceptable as meeting the requirements of the Contract Documents.

2.02 FACILITIES AND EQUIPMENT

Contractor shall provide, install, maintain, and operate a complete and adequate facility for handling, the execution, disposal, and distribution of material and equipment as required for proper and timely performance of Work connected with Contract.

2.03 MATERIAL REFERENCE STANDARDS

Where material is specified solely by reference to "standard specifications" and if requested by District, Contractor shall submit for review data on actual material proposed to be incorporated into Work of Contract listing name and address of vendor, manufacturer, or producer, and trade or brand names of those materials, and data substantiating compliance with standard specifications.

PART 3 - EXECUTION

3.01 WORKMANSHIP

- A. Where not more specifically described in any other Contract Documents, workmanship shall conform to methods and operations of best standards and accepted practices of trade or trades involved and shall include items of fabrication, construction, or installation regularly furnished or required for completion (including finish and for successful operation, as intended).
- B. Work shall be executed by tradespersons skilled in their respective lines of Work. When completed, parts shall have been durably and substantially built and present a neat appearance.

3.02 COORDINATION

- A. Contractor shall coordinate installation of Work so as to not interfere with installation of others. Adjustment or rework because of Contractor's failure to coordinate will be at no additional cost to District.
- B. Contractor shall examine in-place work for readiness, completeness, fitness to be concealed or to receive other work, and in compliance with Contract Documents. Concealing or covering Work constitutes acceptance of additional cost which will result should in-place Work be found unsuitable for receiving other Work or otherwise deviating from the requirements of the Contract Documents.

3.03 COMPLETENESS

Contractor shall provide all portions of the Work, unless clearly stated otherwise, installed complete and operational with all elements, accessories, anchorages, utility connections, etc., in manner to assure well-balanced performance, in accordance with manufacturer's recommendations and by Contract Documents. For example, electric water coolers require water, electricity, and drain services; roof drains require drain system; sinks fit within countertop, etc. Terms such as "installed complete," "operable condition," "for use intended," "connected to all utilities," "terminate with proper cap," "adequately anchored," "patch and refinish," "to match similar," should be assumed to apply in all cases, except where completeness of functional or operable condition is specifically stated as not required.

3.04 APPROVED INSTALLER OR APPLICATOR

Installation by a manufacturer's approved installer or applicator is an understood part of Specifications and only approved installer or applicator is to provide on-site Work where specified manufacturer has on-going program of approving (i.e. certifying, bonding, re-warranting) installers or applicators. Newly established relationships between a manufacturer and an installer or applicator who does not have other approved applicator work in progress or completed is not approved for this Project.

3.05 MANUFACTURER'S RECOMMENDATIONS

All installations shall be in accordance with manufacturer's published recommendations and specific written directions of manufacturer's representative. Should Contract Documents differ from recommendations of manufacturer or directions of his representative, Contractor shall analyze differences, make recommendations to the District and the Architect in writing, and shall not proceed until interpretation or clarification has been issued by the District and/or the Architect.

END OF DOCUMENT

QUALITY CONTROL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Inspector, Inspections and Tests, Uncovering of Work and Non-conforming of Work and Correction of Work;
- B. Special Conditions.

1.02 RELATED CODES:

- A. The Work is governed by requirements of Title 24, California Code of Regulations ("CCR"), and the Contractor shall keep a copy of these available at the job Site for ready reference during construction.
- B. The Division of the State Architect ("DSA") shall be notified at or before the start of construction.

1.03 OBSERVATION AND SUPERVISION:

- A. The District and Architect or their appointed representatives will review the Work and the Contractor shall provide facilities and access to the Work at all times as required to facilitate this review. Administration by the Architect and any consulting Structural Engineer will be in accordance with applicable regulations, including, without limitation, CCR, Part 1, Title 24, Section 4-341.
- B. One or more Project Inspector(s) approved by DSA and employed by or in contract with the District, referred to hereinafter as the "Project Inspector", will observe the work in accordance with CCR, Part 1, Title 24, Sections 4-333(b) and 4-342:
 - (1) The Project Inspector and Special Inspector(s) shall have access to the Work wherever it is in preparation or progress for ascertaining that the Work is in accordance with the Contract Documents and all applicable code sections. The Contractor shall provide facilities and operation of equipment as needed, and access as required and shall provide assistance for sampling or measuring materials.
 - (2) The Project Inspector will notify the District and Architect and call the attention of the Contractor to any observed failure of Work or material to conform to Contract Documents.
 - (3) The Project Inspector shall observe and monitor all testing and inspection activities required.

The Contractor shall conform with all applicable laws as indicated in the Contract Documents, including, without limitation, to CCR, Part 1, Title 24, Section 4-343. The Contractor shall supervise and direct the Work and maintain a competent superintendent on the job who is authorized to act in all matters pertaining to the Work. The Contractor's superintendent shall also inspect all materials, as they arrive, for compliance with the Contract Documents. Contractor shall reject defective Work or materials immediately upon delivery or failure of the Work or material to comply with the Contract Documents. The Contractor shall submit verified reports as indicated in the Contract Documents, including, without limitation, the Specifications and as required by Part 1, Title 24, Section 4-336.

1.04 TESTING AGENCIES:

- A. Testing agencies and tests shall be in conformance with the General Documents and the requirements of Part 1, Title 24, Section 4- 335.
- B. Testing and inspection in connection with earthwork shall be under the direction of the District's consulting soils engineer, if any, referred to hereinafter as the "Soils Engineer."
- C. Testing and inspection of construction materials and workmanship shall be performed by a qualified laboratory, referred to hereinafter as the "Testing Laboratory." The Testing Laboratory shall be under direction of an engineer registered in the State of California, shall conform to requirements of ASTM E329, and shall be employed by or in contract with the District.

1.05 TESTS AND INSPECTIONS:

- A. The Contractor shall be responsible for notifying the District and Project Inspector of all required tests and inspections. Contractor shall notify the District and Project Inspector at least seventy-two hours (72) hours in advance of performing any Work requiring testing or inspection.
- B. The Contractor shall provide access to Work to be tested and furnish incidental labor, equipment, and facilities to facilitate all inspections and tests.
- C. The District will pay for first inspections and tests required by the "CCR", and other inspections or tests that the District and/or the Architect may direct to have made, including the following principal items:
 - (1) Tests and observations for earthwork and paving.
 - (2) Tests for concrete mix designs, including tests of trial batches.
 - (3) Tests and inspections for structural steel work.
 - (4) Field tests for framing lumber moisture content.
 - (5) Additional tests directed by the District that establish that materials and installation comply with the Contract Documents.
 - (6) Tests and observations of welding and expansion anchors.

- D. The District may at its discretion, pay and then back charge the Contractor for:
 - (1) Retests or reinspection's, if required, and tests or inspections required due to Contractor error or lack of required identifications of material.
 - (2) Uncovering of work in accordance with Contract Documents.
 - (3) Testing done on weekends, holidays, and overtime will be chargeable to the Contractor for the overtime portion.
 - (4) Testing done off Site.
- E. Testing and inspection reports and certifications:
 - (1) If initially received by Contractor, Contractor shall provide to each of the following a copy of the agency or laboratory report of each test or inspection or certification.
 - (a) The District;
 - (b) The Construction Manager, if any;
 - (c) The Architect;
 - (d) The Consulting Engineer, if any;
 - (e) Other engineers on the Project, as appropriate;
 - (f) The Project Inspector; and
 - (g) The Contractor.
 - (2) When the test or inspection is one required by the CCR, a copy of the report shall also be provided to the DSA.

PART 2 - PRODUCTS

2.01 TYPE OF TESTS AND INSPECTIONS

- A. Testing and inspection shall be in accordance with DSA Form 103 (or current version) See Exhibit D
- B. Slump Test
ASTM C 143
- C. Concrete Tests

Testing agency shall test concrete used in the work per the following paragraphs:

- (1) Compressive Strength:

- (a) Minimum number of tests required: One (1) set of three (3) cylinders for each 100 cubic yards (Sec. 2604(h) 01) of concrete or major fraction thereof, placed in one (1) day. See Title 24, Section 2605(g).
- (b) Two cylinders of each set shall be tested at twenty-eight (28) days. One (1) cylinder shall be held in reserve and tested only when directed by the Architect or District.
- (c) Concrete shall test the minimum ultimate compressive strength in twenty-eight 28 days, as specified on the structural drawings.
- (d) In the event that the twenty-eight (28) day test falls below the minimum specified strength, the effective concrete in place shall be tested by taking cores in accordance with UBC Standard No. 26-13 and tested as required for cylinders.
- (e) In the event that the test on core specimens falls below the minimum specified strength, the concrete will be deemed defective and shall be removed and replaced upon such direction of the Architect, and in a manner acceptable to the Division of the State Architect.

D. Reinforcing, Steel

E. Structural Steel Per Title 24 and as noted:

- (1) Material: Steel per Table in Title 24, Section 2712.
- (2) Qualification of Welders (UBC Std. 27-6).
- (3) Shop fabrication (Section 2712(d). Structural steel only).
- (4) Shop and field welding (Section 2712(e)).

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions;
- B. Special Conditions;
- C. Site Standards; and
- D. Construction Waste Management and Disposal.

1.02 TEMPORARY UTILITIES:

- A. Electric Power and Lighting:
 - (1) Contractor will pay for power during the course of the Work. To the extent power is available in the building(s) or on the Site, Contractor may use the District's existing utilities by making prearranged payments to the District for the utilities used by Contractor and all Subcontractors. Contractor shall be responsible for providing temporary facilities required to deliver that power service from its existing location in the building(s) or on the Site to point of intended use.
 - (2) Contractor shall verify characteristics of power available in building(s) or on the Site. Contractor shall take all actions required to make modifications where power of higher voltage or different phases of current are required. Contractor shall be fully responsible for providing that service and shall pay all costs required therefor.
 - (3) Contractor shall furnish, wire for, install, and maintain temporary electrical lights wherever it is necessary to provide illumination for the proper performance and/or observation of the Work: a minimum of 20 foot-candles for rough work and 50 foot-candles for finish work.
 - (4) Contractor shall be responsible for maintaining existing lighting levels in the project vicinity should temporary outages or service interruptions occur.
- B. Heat and Ventilation:
 - (1) Contractor shall provide temporary heat to maintain environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for the installation and curing of materials, and to

protect materials and finishes from damage due to improper temperature and humidity conditions. Portable heaters shall be standard units complete with controls.

- (2) Contractor shall provide forced ventilation and dehumidification, as required, of enclosed areas for proper installation and curing of materials, to disperse humidity, and to prevent hazardous accumulations of dust, fumes, vapors, and gases.
- (3) Contractor shall pay the costs of installation, maintenance, operation, and removal of temporary heat and ventilation, including costs for fuel consumed, required for the performance of the Work.

C. Water:

- (1) Contractor shall pay for water used during the course of the Work. Contractor shall coordinate and pay for installation or use of water meter in compliance with local water agency requirements. To the extent water is then available in the building(s) or on the Site, Contractor may use the District's existing utilities by making prearranged payments to the District for the utilities used by Contractor and all Subcontractors. Contractor shall be responsible for providing temporary facilities required to deliver such utility service from its existing location in the building(s), on the Site, or other location approved by the local water agency, to point of intended use.
- (2) Contractor shall use backflow preventers on water lines at point of connection to District's water supply. Backflow preventers shall comply with requirements of Uniform Plumbing Code.
- (3) Contractor shall make potable water available for human consumption.

D. Sanitary Facilities:

- (1) Contractor shall provide sanitary temporary facilities in no fewer numbers than required by law and such additional facilities as may be directed by the Inspector for the use of all workers. The facilities shall be maintained in a sanitary condition at all times and shall be left at the Site until removal is directed by the Inspector or Contractor completes all other work at the Site.
- (2) Use of toilet facilities in the Work under construction shall not be permitted except by consent of the Inspector and the District.

E. Telephone Service:

- (1) Contractor shall arrange with local telephone service company for telephone service as required for the performance of the Work. Contractor shall, at a minimum, provide in its field office one line for telephone and one line for fax machine.
- (2) Contractor shall pay the costs for telephone and fax lines installation, maintenance, service, and removal.

- F. Fire Protection:
 - (1) Contractor shall provide and maintain fire extinguishers and other equipment for fire protection. Such equipment shall be designated for use for fire protection only and shall comply with all requirements of the California Fire, State Fire Marshall and/or its designee.
 - (2) Where on-site welding and burning of steel is unavoidable, Contractor shall provide protection for adjacent surfaces.
- G. Trash Removal:
 - (1) Contractor shall provide trash removal on a daily basis. Under no circumstance shall Contractor use District trash service.
- H. Field Office:
 - (1) If Contractor chooses to provide a field office, it shall be an acceptable construction trailer that is well-lit and ventilated. The construction trailer shall be equipped with shelves, desks, filing cabinet, chairs, and such other items of equipment needed. Trailer and equipment are the property of the Contractor and must be removed from the Site upon completion of the Work. Contractor shall coordinate lay-down area with the District Representative for approval in writing.
 - (2) Contractor shall provide any additional electric lighting and power required for the trailer. Contractor shall make adequate provisions for heating and cooling as required.
- I. Temporary Facilities: n/a
 - (1)

1.03 CONSTRUCTION AIDS:

- A. Plant and Equipment:
 - (1) Contractor shall furnish, operate, and maintain a complete plant for fabricating, handling, conveying, installing, and erecting materials and equipment; and for conveyances for transporting workers. Include elevators, hoists, debris chutes, and other equipment, tools, and appliances necessary for performance of the Work.
 - (2) Contractor shall maintain plant and equipment in safe and efficient operating condition. Damages due to defective plant and equipment, and uses made thereof, shall be repaired by Contractor at no expense to the District.
- B. None of the District's tools and equipment shall be used by Contractor for the performance of the Work.

1.04 BARRIERS AND ENCLOSURES:

- A. Contractor shall obtain the District's written permission for locations and types of temporary barriers and enclosures, including fire-rated materials proposed for use, prior to their installation.
- B. Contractor shall provide and maintain temporary enclosures to prevent public entry and to protect persons using other buildings and portions of the Site and/or Premises, the public, and workers. Contractor shall also protect the Work and existing facilities from the elements, and adjacent construction and improvements, persons, and trees and plants from damage and injury from demolition and construction operations.
- C. Contractor shall provide site access to existing facilities for persons using other buildings and portions of the Site, the public, and for deliveries and other services and activities.
- D. Tree and Plant Protection:
 - (1) Contractor shall preserve and protect existing trees and plants on the Premises that are not designated or required to be removed, and those adjacent to the Premises.
 - (2) Contractor shall provide barriers to a minimum height of 4'-0" around drip line of each tree and plant, around each group of trees and plants, as applicable, in the proximity of demolition and construction operations, or as denoted on the Plans.
 - (3) Contractor shall not park trucks, store materials, perform Work or cross over landscaped areas. Contractor shall not dispose of paint thinners, water from cleaning, plastering or concrete operations, or other deleterious materials in landscaped areas, storm drain systems, or sewers. Plant materials damaged as a result of the performance of the Work shall, at the option of the District and at Contractor's expense, either be replaced with new plant materials equal in size to those damaged or by payment of an amount representing the value of the damaged materials as determined by the District.
 - (4) Contractor shall remove soil that has been contaminated during the performance of the Work by oil, solvents, and other materials which could be harmful to trees and plants, and replace with good soil, at Contractor's expense.
 - (5) Excavation around Trees:
 - (a) Excavation within drip lines of trees shall be done only where absolutely necessary and with written permission from the District.
 - (b) Where trenching for utilities is required within drip lines, tunneling under and around roots shall be by hand digging and shall be approved by the District. Main lateral roots and taproots shall not be cut. All roots 2 inches in diameter and

larger shall be tunneled under and heavily wrapped with wet burlap so as to prevent scarring or excessive drying. Smaller roots that interfere with installation of new work may be cut with prior approval by the District. Roots must first be cut with a Vermeer, or equivalent, root cutter prior to any trenching.

- (c) Where excavation for new construction is required within drip line of trees, hand excavation shall be employed to minimize damage to root system. Roots shall be relocated in backfill areas wherever possible. If encountered immediately adjacent to location of new construction, roots shall be cut approximately 6 inches back from new construction.
- (d) Approved excavations shall be carefully backfilled with the excavated materials approved for backfilling. Backfill shall conform to adjacent grades without dips, sunken areas, humps, or other surface irregularities. Do not use mechanical equipment to compact backfill. Tamp carefully using hand tools, refilling and tamping until Final Acceptance as necessary to offset settlement.
- (e) Exposed roots shall not be allowed to dry out before permanent backfill is placed. Temporary earth cover shall be provided, or roots shall be wrapped with four layers of wet, untreated burlap and temporarily supported and protected from damage until permanently relocated and covered with backfill.
- (f) Accidentally broken roots should be sawed cleanly 3 inches behind ragged end.

1.05 SECURITY:

The Contractor shall be responsible for project security for materials, tools, equipment, supplies, and completed and partially completed Work.

1.06 TEMPORARY CONTROLS:

A. Noise Control:

- (1) Contractor acknowledges that adjacent facilities may remain in operation during all or a portion of the Work period, and it shall take all reasonable precautions to minimize noise as required by applicable laws and the Contract Documents.
- (2) Notice of proposed noisy operations, including without limitation, operation of pneumatic demolition tools, concrete saws, and other equipment, shall be submitted to the District a minimum of forty-eight (48) hours in advance of their performance.

B. Noise and Vibration:

- (1) Equipment and impact tools shall have intake and exhaust mufflers.

- (2) Contractor shall cooperate with District to minimize and/or cease the use of noisy and vibratory equipment if that equipment becomes objectionable by its longevity.

C. Dust and Dirt:

- (1) Contractor shall conduct demolition and construction operations to minimize the generation of dust and dirt, and prevent dust and dirt from interfering with the progress of the Work and from accumulating in the Work and adjacent areas including, without limitation, occupied facilities.
- (2) Contractor shall periodically water exterior demolition and construction areas to minimize the generation of dust and dirt.
- (3) Contractor shall ensure that all hauling equipment and trucks carrying loads of soil and debris shall have their loads sprayed with water or covered with tarpaulins, and as otherwise required by local and state ordinance.
- (4) Contractor shall prevent dust and dirt from accumulating on walks, roadways, parking areas, and planting, and from washing into sewer and storm drain lines.

D. Water:

- (1) Contractor shall not permit surface and subsurface water, and other liquids, to accumulate in or about the vicinity of the Premises. Should accumulation develop, Contractor shall control the water or other liquid, and suitably dispose of it by means of temporary pumps, piping, drainage lines, troughs, ditches, dams, or other methods.

E. Pollution:

- (1) No burning of refuse, debris, or other materials shall be permitted on or in the vicinity of the Premises.
- (2) Contractor shall comply with applicable regulatory requirements and anti-pollution ordinances during the conduct of the Work including, without limitation, demolition, construction, and disposal operations.

F. Lighting:

- (1) If portable lights are used after dark, all light must be located so as not to direct light into neighboring property.

1.07 JOB SIGN(S):

A. General:

- (1) Contractor shall provide and maintain a Project identification sign with the design, text, and colors designated by the District and/or the Design Professional; locate sign as approved by the District.

- (2) Signs other than the specified Project sign and or signs required by law, for safety, or for egress, shall not be permitted, unless otherwise approved in advance by the District.

B. Materials:

- (1) Structure and Framing: Structurally sound, new or used wood or metal; wood shall be nominal 3/4-inch exterior grade plywood.
- (2) Sign Surface: Minimum 3/4-inch exterior grade plywood.
- (3) Rough Hardware: Galvanized.
- (4) Paint: Exterior quality, of type and colors selected by the District and/or the Design Professional.

C. Fabrication:

- (1) Contractor shall fabricate to provide smooth, even surface for painting.
- (2) Size: 4'-0" x 8'-0", unless otherwise indicated.
- (3) Contractor shall paint exposed surfaces of supports, framing, and surface material with exterior grade paint: one coat of primer and one coat of finish paint.
- (4) Text and Graphics: As indicated.

1.08 PUBLICITY RELEASES:

- A. Contractor shall not release any information, story, photograph, plan, or drawing relating information about the Project to anyone, including press and other public communications medium, including, without limitation, on website(s) without the written permission of the District.

PART 2 – PRODUCTS Not used.

PART 3 – EXECUTION Not used.

END OF DOCUMENT

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions;
- B. Special Conditions; and
- C. Temporary Facilities and Controls.

1.02 SECTION INCLUDES:

- A. Administrative and procedural requirements for the following:
 - (1) Salvaging non-hazardous construction waste.
 - (2) Recycling non-hazardous construction waste.
 - (3) Disposing of non-hazardous construction waste.

1.03 DEFINITIONS:

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.04 PERFORMANCE REQUIREMENTS:

- A. General: Develop waste management plan that results in end-of Project rates for salvage/recycling of sixty-five percent (65%) by weight (or by volume, but not a combination) of total waste generated by the Work.

1.05 SUBMITTALS:

- A. Waste Management Plan: Submit waste management plan within 30 days of date established for commencement of the Work.
- B. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit copies of report. Include the following information:
 - (1) Material category.
 - (2) Generation point of waste.
 - (3) Total quantity of waste in tons or cubic yards.
 - (4) Quantity of waste salvaged, both estimated and actual in tons or cubic yards.
 - (5) Quantity of waste recycled, both estimated and actual in tons or cubic yards.
 - (6) Total quantity of waste recovered (salvaged plus recycled) in tons or cubic yards.
 - (7) Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- C. Waste Reduction Calculations: Before request for final payment, submit copies of calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- D. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- E. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- F. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- G. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

- H. Qualification Data: For Waste Management Coordinator.
- I. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- J. Submittal procedures and quantities are specified in Document 01 33 00.

1.06 QUALITY ASSURANCE:

- A. Waste Management Coordinator Qualifications: LEED Accredited Professional by U.S. Green Building Council.
- B. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Waste Management Conference: Conduct conference at Project site to comply with requirements. Review methods and procedures related to waste management including, but not limited to, the following:
 - (1) Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
 - (2) Review requirements for documenting quantities of each type of waste and its disposition.
 - (3) Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
 - (4) Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
 - (5) Review waste management requirements for each trade.

1.07 WASTE MANAGEMENT PLAN:

- A. General: Develop plan consisting of waste identification, waste reduction work plan, and cost/revenue analysis. Indicate quantities by weight or volume, but use same units of measurement throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of site-clearing and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

- (1) Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
- (2) Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
- (3) Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
- (4) Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
- (5) Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
- (6) Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION

3.01 PLAN IMPLEMENTATION:

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 - (1) Comply with Document 01 50 00 for operation, termination, and removal requirements.
- B. [Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.]
- C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
 - (1) Distribute waste management plan to everyone concerned within 3 days of submittal return.

- (2) Distribute waste management plan to entities when they first begin work on site. Review plan procedures and locations established for salvage, recycling, and disposal.
- D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - (1) Designate and label specific areas of Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
 - (2) Comply with Document 01 50 00 for controlling dust and dirt, environmental protection, and noise control.

3.02 RECYCLING CONSTRUCTION WASTE:

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to the Contractor.
- C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.
 - (1) Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project Site. Include list of acceptable and unacceptable materials at each container and bin.
 - (a) Inspect containers and bins for contamination and remove contaminated materials if found.
 - (2) Stockpile processed materials on site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - (3) Stockpile materials away from construction area. Do not store within drip line of remaining trees.
 - (4) Store components off the ground and protect from the weather.
 - (5) Remove recyclable waste off District property and transport to recycling receiver or processor.
- D. Packaging:
 - (1) Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
 - (2) Polystyrene Packaging: Separate and bag material.

- (3) Pallets: As much as possible, require deliveries using pallets to remove pallets from Project Site. For pallets that remain on Site, break down pallets into component wood pieces and comply with requirements for recycling wood.
- (4) Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- E. Site-Clearing Wastes: Chip brush, branches, and trees on site.
- F. Wood Materials:
 - (1) Clean Cut-Offs of Lumber: Grind or chip into small pieces.
 - (2) Clean Sawdust: Bag sawdust that does not contain painted or treated wood.
- G. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location.
 - (1) Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

3.03 DISPOSAL OF WASTE:

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project Site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 - (1) Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on site.
 - (2) Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Transport waste materials off District property and legally dispose of them.

END OF DOCUMENT

FIELD OFFICES

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions;
- B. Special Conditions; and
- C. Temporary Facilities and Controls.

1.02 SECTION INCLUDES:

- A. Requirements for Field Offices and Field Office Trailers.

1.03 SUMMARY:

- A. General: Contractor shall provide District's Field Office Trailer and contents, for District's use exclusively, during the term of the Contract.
- B. Property: Trailer, furniture, furnishings, equipment, and the like, supplied by the Contractor with the Office Trailer shall remain the property of the Contractor; District property items installed, delivered, and the like by District within the Office Trailer will remain District's property.
- C. Modifications: District reserves the right to modify the trailer or contents, or both, as may be deemed proper by District.
- D. Condition: Trailer and contents shall be clean, neat, substantially finished, in good, proper, and safe condition for use, operation, and the like; the trailer and contents shall not be required to be new.
- E. Installation Timing: Provide safe, fully furnished, functional, proper, complete, and finished trailer properly ready for entire use, within fourteen (14) calendar days of District's notification of the issuance of Notice to Proceed.

1.04 SUBMITTALS:

- A. General: Submit submittals to District in quantity, format, type, and the like, as specified herein.
- B. Office Trailer Data: One (1) copy of manufacturer's descriptive data, technical descriptions, regulatory compliance, industry standards, installation, removal, and maintenance instructions.

- C. Equipment Data: Two (2) copies of manufacturer data for each type of equipment, if directed by District.
- D. Furniture and Furnishings Data: Two (2) copies of manufacturer data for each type of equipment, if directed by District.
- E. Plans: One (1) reproducible copy of appropriately scaled plans of trailer layout. Plans shall include, but not be limited to: lighting; furniture; equipment; telephone and electrical outlets; and the like.
- F. Product Samples: One (1) complete and entire unit of each type, if directed by District.

1.05 QUALITY ASSURANCE

- A. Standards: In the event that provisions of codes, regulations, safety orders, Contract Documents, referenced manufacturer's specifications, manufacturer's instructions, industry standards, and the like, are in conflict, the more restrictive and higher quality shall govern.
- B. Installer: Installer or Installers engaged by Contractor must have a minimum of five (5) years of documented and properly authenticated successful experience of specialization in the installation of the items or systems, or both, specified herein.
- C. Manufacturer: Contractor shall obtain products from nationally and industry recognized Manufacturer with five (5) years minimum, of immediately recent, continuous, documented and properly authenticated successful experience of specialization in the manufacture of the product specified herein.
- D. State Personnel Training: Provide proper training for maintenance and operations, including emergency procedures, and the like, as directed by District.
- E. Units: Shall be sound and free of defects, and shall not include any damage or defect that will impair the safety, installation, performance, or the durability of the entire Office Trailer and appurtenant systems.

1.06 REGULATORY REQUIREMENTS

- A. General: Work shall be executed in accordance with applicable Codes, Regulations, Statutes, Enactments, Rulings, Laws, each authority having jurisdiction, and including, but not limited to, Regulatory Requirements specified herein.
- B. California Building Standards Code ("CBSC").
- C. California Code of Regulations, Title 25, Chapter 3, Sub Chapter 2, Article 3 ("CCR").
- D. Coach Insignia: Trailer shall display California Commercial Coach Insignia; such insignia shall be deemed to show that the trailer is in accordance with the Construction and Fire Safety requirements of CCR.

PART 2 – PRODUCTS

2.01 FIELD OFFICE TRAILER

- A. General: Provide entire Field Office Trailer of type, function, operation, capacity, size, complete with controls, safety devices, accessories, and the like, for proper and durable installation. Partitions, walls, ceiling, and other interior and exterior surfaces shall be appropriately finished, including, but not limited to, trim, painting, wall base, floor covering, suspended or similar ceiling, and the like; provide systems, components, units, nuts, bolts, screws, anchoring devices, fastening devices, washers, accessories, adhesives, sealants, and other items of type, grade, and class required for the particular use, not identified but required for a complete, weather-tight, appropriately operating, and finished installation.
- B. Manufacturers: General Electric Capital Modular Space; The Space Place, Inc.; or equal.
- C. Program: Provide a wheel-mounted trailer with stairs, landings, platforms, ramps, and the like, in good, proper, safe, clean, and properly finished condition; with proper heavy duty locks, and other proper and effective security at all doors, windows, and the like. Trailer shall be maintained in good, proper, safe, clean, and properly finished condition during the Contract.
- (1) Nominal Trailer Size: Four hundred eighty (480) square feet, minimum.
 - (2) Stairs, Platform: Properly finished stairs, platforms, and ramps.
 - (3) Doors: Two (2), three (3) foot wide exterior doors with locksets; finished ramp, steps, and entry platform at each exterior door.
 - (4) Keys: Submit five (5) keys for each door, window, furniture unit, and the like. There shall be no other key copies or originals available; each key shall be identified for District; and shall be labeled, or tagged or both, as directed by District.
 - (5) HVAC:
 - (6) Lighting: Sixty-five (65) foot-candles illumination minimum at any point, at thirty (30) inches above finished floor throughout from fluorescent light source, exclusively, or as directed by District.
 - (7) Electrical Outlets: One (1) duplex outlet evenly spaced every twelve (12) linear horizontal feet of wall face, and electrical service ready for use.
 - (8) Telephones and Telephone Outlets: Two (2) telephone lines wired, connected to telephone utility service, and ready for use, and two (2) telephone instruments, each with two (2)-line capability, speed dial and hands-free feature. Locate each outlet as directed by District.

2.02 FIELD OFFICE TRAILER ITEMS

- A. General: Provide the Field Office Trailer with the following arranged into two (2) workstations:
- (1) Desks: Two (2) desks: thirty-six (36) inches by sixty (60) inches; steel, laminated plastic top; locking, one (1) or two (2) file drawers single pedestal; steel; provide five (5) keys to District.
 - (2) Tables: Two (2) tables; thirty-six (36) inches by sixty (60) inches; twenty-nine (29) inches high; steel, laminated plastic top tables; one (1) at each desk.
 - (3) Chairs: Two (2) chairs: swivel; steel; with seat cushion and arms; one (1) at each desk.
 - (4) Waste Baskets: Two (2) waste baskets, one at each desk.
- B. Furniture and Equipment: Provide in the space located to effect efficient and logical use.
- (1) File cabinet: One (1); four (4) drawer; lateral; steel locking.
 - (2) Plan Table: One (1) plan table: thirty-six (36) inches deep by seventy-two (72) inches wide by forty-two (42) inches high; adjustable; wood or steel; with lockable plan and pencil drawers.
 - (3) Drafting Stool: One (1) drafting stool; swiveling; steel; padded; adjustable; with footrest and casters.
 - (4) Bookshelf: One (1) bookshelf: thirty-six (36) inches deep by seventy-two (72) inches wide by forty-two (42) inches high; adjustable; wood or steel; with lockable plan and pencil drawer.
 - (5) Plan Rack: One (1) wheel mounted plan rack.
 - (6) Waste Baskets: One (1) large waste basket.
 - (7) Coat/Hat Hanger: Wall mounted with minimum capacity for four (4) garments and ten (10) hats.
 - (8) Document Management System: Shall include an integrated high-volume printer, copier, and facsimile machine, including stand, base, and storage cabinet; and shall include the following features:
 - (a) Type: Laser, dry electrostatic transfer, plain paper, digital, multi-function imaging system.
 - (b) Network: Ethernet or Token Ring network ready, Plug-and-Play.
 - (c) Print, send/receive facsimile from any connected workstation.

- (d) Resolution: Six hundred (600) dots per inch by six hundred (600) dots per inch, minimum.
 - (e) Print Speed: Twenty (20) pages per minute, minimum.
 - (f) Copies: Twenty (20) copies per minute, minimum.
 - (g) Document Handler: Forty (40) sheet, minimum
 - (h) Collator: Forty (40) bin, minimum, with stapling.
 - (i) Duplexing: Capable.
 - (j) Paper Size: Capable of handling paper sizes to eleven (11) inches by seventeen (17) inches.
 - (k) Paper Cassettes: One (1) each for eight and one half (8.5) inches by eleven (11) inches, eight and one half (8.5) inches by fourteen (14) inches, and eleven (11) inches by seventeen (17) inches paper sizes; minimum two hundred fifty (250) sheets per cassette.
 - (l) Reduction/Enlargement: Capable of reduction to twenty-five percent (25%) and enlargement to two hundred percent (200%).
 - (m) Facsimile Electronic Storage: Capable of storing minimum of fifty (50) speed dial numbers, group faxing and broadcast faxing.
 - (n) Facsimile Scanning: Capable of scanning into memory a minimum of one hundred (100) pages with maximum scan time of three (3) seconds per page.
 - (o) Halftone: Sixty-four (64) levels.
 - (p) Redial: Automatic and Manual.
- (9) Maintenance: Contractor shall purchase service agreements for each unit of equipment for the duration of the project plus two (2) months, and shall maintain all equipment in proper working condition. Service agreements shall include provision for replacement of toner cartridges and other items required to effect proper unit use. Service agreements shall also provide for:
- (a) Unlimited Service Calls.
 - (b) Same Day Response.
 - (c) All parts, labor, preventative maintenance and mileage.
 - (d) All chemicals, such as toner, fixing agent, and the like.

- (e) System training and setup.
- (10) Portable Toilets: Two (2); each shall include a urinal; each unit shall be a properly enclosed chemical unit conforming to ANSI Z4.3.
 - (a) Location: As directed by District.
 - (b) Maintenance: Maintain each unit and surrounding areas in a clean, hygienic and orderly manner, at all time. Empty, clean, and sanitize each unit each day at a location and time as directed by District.
 - (c) Removal: Relocate, or remove from the site, each Portable Toilet. Upon such directive by District, the Contractor shall forthwith relocate or remove each Portable Toilet and submit the affected areas to a condition which existed prior to the installation of each Portable Toilet, within three (3) calendar days, or as directed by District in writing, at no cost to District.

2.03 UTILITY AND SERVICES

- A. Telephone Service: Contractor shall provide and interface the entire telephone service and shall properly and timely pay for telephone service for District's non-long-distance use.
- B. Electrical Service: Provide all proper connections and continuously pay for service for the duration of the Work.

2.04 FINISHES

- A. General: Manufacturer standard finish system over surfaces properly cleaned, pretreated, and prepared to obtain proper bond; all visible surfaces shall be coated.
- B. Finish: Color as selected by District from manufacturer standard palette.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. General: Properly prepare area and affected items to receive the Work. Set Work accurately in location, alignment, and elevation; rigidly, securely, and firmly anchor to appropriate structure; install plumb, straight, square, level, true, without racking, rigidly anchored to proper solid blocking, substrate, and the like; provide appropriate type and quantity of reinforcements, fasteners, adhesives, self-adhesive and other tapes; lubricants, coatings, accessories, and the like, as required for a complete, structurally rigid, stable, sound, and appropriately finished installation, in accordance with manufacturer's published instructions, and as indicated. The more restrictive and higher quality requirement shall govern. Moving parts shall be properly secured, without binding, looseness, noise, and the like.

- B. Installation: Install in accordance with 25 CCR 3.2.3 and as directed by District; jack up trailer and level both ways; mount on proper concrete piers with all load off wheels; provide required tie down and accessories per Section 4368 of referenced CCR, and as directed by District.
- C. Rejected Work: Work, materials, unit, items, systems, and the like, not accepted by District shall be deemed rejected, and shall forthwith be removed and replaced with proper and new Work, materials, unit, items, systems, and the like at no cost to District.
- D. Standard: Comply with manufacturer's published instructions, or with instructions as shown or indicated; the more restrictive and higher quality requirement shall govern.
- E. Location: As directed by District.
- F. Fire Resistance: Construct and install in accordance with UL requirements.
- G. Maintenance: Contractor shall maintain trailer and adjacent areas in a safe, clean and hygienic condition throughout the duration of the Work, and as directed by District. Properly repair or replace furniture or other items, as directed by District. Properly remove unsafe, damaged, or broken furniture, or similar items, and replace with safe and proper items. Contractor shall pay cost of all services, repair, and maintenance, or replacement of each item.
- H. Janitorial Service: Provide professional janitorial services, including, but not limited to, trash, waste paper baskets, fill paper dispensers; clean and dust all furniture, files, and the like; sweep and mop resilient and similar flooring; and vacuum carpeting and similar flooring.
 - (1) Frequency: Two (2) times per week, minimum.
- I. Removal: Properly remove the Office Trailer and contents from the Site upon completion of the Contract, or as directed by District in writing. Forthwith properly patch and repair affected areas; replace damaged items with new items. Carefully and properly inventory, clean, pack, store, and protect District property; submit District property to District at a date, time and location as directed by District.

END OF DOCUMENT

OWNER-FURNISHED PRODUCTS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions;
- B. Special Conditions; and
- C. Materials and Equipment.

1.02 SECTION INCLUDES

- A. Requirements for the following:
 - (1) Installing Owner-furnished materials and equipment.
 - (2) Providing necessary utilities, connections and rough-ins.

1.03 DEFINITIONS

- A. Owner: District, who is providing/furnishing materials and equipment.
- B. Installing Contactor: Contractor, who is installing the materials and equipment furnished by the Owner.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Receive, store and handle products in accordance with the manufacturer's instructions.
- B. Protect equipment items as required to prevent damage during storage and construction.

PART 2 – PRODUCTS

2.01 GENERAL PRODUCT REQUIREMENTS

- A. Installing Contractor's Responsibilities:
 - (1) Verify mounting and utility requirements for Owner-furnished materials and equipment items.
 - (2) Provide mounting and utility rough in for all items where required.

- (a) Rough in locations, sizes, capacities, and similar type items shall be as indicated and required by product manufacturer.

B. Owner and Installing Contractor(s) Responsibilities:

- (1) Owner-Furnished/Contractor Installed ("OFCI"): Furnished by the Owner; installed by the Installing Contractor.
 - (a) General: Owner and Installing Contractor(s) will coordinate deliveries of materials and equipment to coincide with the construction schedule.
 - (b) Owner will furnish specified materials and equipment delivered to the site. Owner/vendor's representative shall be present on Site at the time of delivery to comply with the contract requirements and Specifications Section 01 43 00, Materials and Equipment, Article 1.04.
 - (c) The Owner furnishing specified materials and equipment is responsible to provide manufacturer guarantees as required by the Contract to the Installing Contractor.
 - (d) The Installing Contractor shall:
 - 1) Review, verify and accept the approved manufacturer's submittal/Shop Drawings for all materials and equipment required to be installed by the Installer Contractor and furnished by the Owner. Any discrepancies, including but not limited to possible space conflicts, should be brought to the attention of the Project Manager and/or Program Manager, if applicable.
 - 2) Coordinate timely delivery. Installing Contractor shall receive materials and equipment at Site when delivered and give written receipt at time of delivery, noting visible defects or omissions; if such declaration is not given, the Installing Contractor shall assume responsibility for such defects and omissions.
 - 3) Store materials and equipment until ready for installation and protect from loss and damage. Installing Contractor is responsible for providing adequate storage space.
 - 4) Coordinate with other bid package contractors and field measurement to ensure complete installation.
 - 5) Uncrate, assemble, and set in place.
 - 6) Provide adequate supports.
 - 7) Install materials and equipment in accordance with manufacturer's recommendations, instructions, and

Shop Drawings, supply labor and material required, and make mechanical, plumbing, and electrical connections required to operate equipment.

- 8) Be certified by equipment manufacturer for installation of the specific equipment supplied by the Owner.
- 9) Provide anchorage and/or bracing as required for seismic restraint per Title 24, UBC Standard 27-11 and all other applicable codes.
- 10) Provide the contract-required warranty and guarantee for all work, materials and equipment, and installation upon its completion and acceptance by the District. Guarantee includes all costs associated with the removal, shipping to and from the Site, and re-installation of any equipment found to be defective.

C. Compatibility with Space and Service Requirements:

- (1) Equipment items shall be compatible with space limitations indicated and as shown on the Contract Documents and specified in other sections of the Specifications.
- (2) Modifications to equipment items required to conform to space limitations specified for rough in shall not cause additional cost to the District.

D. Manufacturer's printed descriptions, specifications, and instructions shall govern the Work unless specifically indicated or specified otherwise.

2.02 FURNISHED MATERIALS AND EQUIPMENT

- A. All furnished materials and equipment are indicated or scheduled on the Contract Documents.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Install equipment items in accordance with the manufacturer's instructions.
- B. Set equipment items securely in place, rigidly or flexibly mounted in accordance with manufacturers' directions.
- C. Make electrical and mechanical connections as indicated and required.
- D. Touch-up and restore damaged or defaced finishes to the Owner's satisfaction.

3.02 CLEANING AND PROTECTION

- A. Repair or replace items not acceptable to the Architect or Owner.

- B. Upon completion of installation, clean equipment items in accordance with manufacturer's recommendations, and protect from damage until final acceptance of the Work by the Owner.

END OF DOCUMENT

PRODUCT DELIVERY, STORAGE AND HANDLING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Site Access, Conditions and Requirements;
- B. Special Conditions.

1.02 PRODUCTS

- A. Products are as defined in the General Conditions.
- B. Contractor shall not use and/or reuse materials and/or equipment removed from existing Premises, except as specifically permitted by the Contract Documents.
- C. Contractor shall provide interchangeable components of the same manufacturer, for similar components.

1.03 TRANSPORTATION AND HANDLING

- A. Contractor shall transport and handle Products in accordance with manufacturer's instructions.
- B. Contractor shall promptly inspect shipments to confirm that Products comply with requirements, quantities are correct, and products are undamaged.
- C. Contractor shall provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

1.04 STORAGE AND PROTECTION

- A. Contractor shall store and protect Products in accordance with manufacturer's instructions, with seals and labels intact and legible. Contractor shall store sensitive products in weather-tight, climate-controlled enclosures.
- B. For exterior storage of fabricated Products, Contractor shall place on sloped supports, above ground.
- C. Contractor shall provide off-site storage and protection when Site does not permit on-site storage or protection.

- D. Contractor shall cover products subject to deterioration with impervious sheet covering and provide ventilation to avoid condensation.
- E. Contractor shall store loose granular materials on solid flat surfaces in a well-drained area and prevent mixing with foreign matter.
- F. Contractor shall provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.
- G. Contractor shall arrange storage of Products to permit access for inspection and periodically inspect to assure Products are undamaged and are maintained under specified conditions.

PART 2 – PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

FIELD ENGINEERING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Site Investigation, and Soils Investigation Report;
- B. Special Conditions;
- C. Site-Visit Certification.

1.02 REQUIREMENTS INCLUDED:

- A. Contractor shall provide and pay for field engineering services by a California-registered engineer, required for the project, including, without limitations:
 - (1) Survey work required in execution of the Project.
 - (2) Civil or other professional engineering services specified, or required to execute Contractor's construction methods.

1.03 QUALIFICATIONS OF SURVEYOR OR ENGINEERS:

Contractor shall only use a qualified licensed engineer or registered land surveyor, to whom District makes no objection.

1.04 SURVEY REFERENCE POINTS:

- A. Existing basic horizontal and vertical control points for the Project are those designated on the Drawings.
- B. Contractor shall locate and protect control points prior to starting Site Work and preserve all permanent reference points during construction. In addition Contractor shall:
 - (1) Make no changes or relocation without prior written notice to District and Architect.
 - (2) Report to District and Architect when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
 - (3) Require surveyor to replace Project control points based on original survey control that may be lost or destroyed.

1.05 RECORDS:

Contractor shall maintain a complete, accurate log of all control and survey work as it progresses.

1.06 SUBMITTALS:

- A. Contractor shall submit name and address of Surveyor and Professional Engineer to District and Architect prior to its/their work on the Project.
- B. On request of District and Architect, Contractor shall submit documentation to verify accuracy of field engineering work, at no additional cost to the District.
- C. Contractor shall submit a certificate signed by registered engineer or surveyor certifying that elevations and locations of improvements are in conformance or nonconformance with Contract Documents.

PART 2 – PRODUCTS Not Used.

PART 3 - EXECUTION

3.01 COMPLIANCE WITH LAWS:

Contractor is responsible for meeting all applicable codes, OSHA, safety and shoring requirements.

3.02 NONCONFORMING WORK:

Contractor is responsible for any re-surveying required by correction of nonconforming work.

END OF DOCUMENT

CUTTING AND PATCHING

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Inspector, Inspections, and Tests, Integration of Work, Nonconforming Work, and Correction of Work, and Uncovering Work;
- B. Special Conditions;
- C. Imported Materials Certification.

1.02 CUTTING AND PATCHING:

- A. Contractor shall be responsible for all cutting, fitting, and patching, including associated excavation and backfill, required to complete the Work or to:
 - (1) Make several parts fit together properly.
 - (2) Uncover portions of Work to provide for installation of ill-timed Work.
 - (3) Remove and replace defective Work.
 - (4) Remove and replace Work not conforming to requirements of Contract Documents.
 - (5) Remove Samples of installed Work as specified for testing.
 - (6) Provide routine penetrations of non-structural surfaces for installation of piping and electrical conduit.
 - (7) Attaching new materials to existing remodeling areas – including painting (or other finishes) to match existing conditions.
- B. In addition to Contract requirements, upon written instructions from the District, Contractor shall uncover Work to provide for observations of covered Work in accordance with the Contract Documents; remove samples of installed materials for testing as directed by District; and remove Work to provide for alteration of existing Work.
- C. Contractor shall not cut or alter Work, or any part of it, in such a way that endangers or compromises the integrity of the Work, the Project, or work of others.

1.03 SUBMITTALS:

- A. Prior to any cutting or alterations that may affect the structural safety of Project, or work of others, and well in advance of executing such cutting or alterations, Contractor shall submit written notice to District pursuant to the applicable notice provisions of the Contract Documents, requesting consent to proceed with the cutting or alteration, including the following:
 - (1) The work of the District or other trades.
 - (2) Structural value or integrity of any element of Project.
 - (3) Integrity or effectiveness of weather-exposed or weather-resistant elements or systems.
 - (4) Efficiency, operational life, maintenance or safety of operational elements.
 - (5) Visual qualities of sight-exposed elements.

- B. Contractor's Request shall also include:
 - (1) Identification of Project.
 - (2) Description of affected Work.
 - (3) Necessity for cutting, alteration, or excavations.
 - (4) Effects of Work on District, other trades, or structural or weatherproof integrity of Project.
 - (5) Description of proposed Work:
 - (a) Scope of cutting, patching, alteration, or excavation.
 - (b) Trades that will execute Work.
 - (c) Products proposed to be used.
 - (d) Extent of refinishing to be done.
 - (6) Alternates to cutting and patching.
 - (7) Cost proposal, when applicable.
 - (8) The scheduled date the Contractor intends to perform the Work and the duration of time to complete the Work.
 - (9) Written permission of District or other District contractor(s) whose work will be affected.

1.04 QUALITY ASSURANCE:

- A. Contractor shall ensure that cutting, fitting, and patching shall achieve security, strength, weather protection, appearance for aesthetic match, efficiency, operational life, maintenance, safety of operational elements, and the continuity of existing fire ratings.
- B. Contractor shall ensure that cutting, fitting, and patching shall successfully duplicate undisturbed adjacent profiles, materials, textures, finishes, colors, and that materials shall match existing construction. Where there is dispute as to whether duplication is successful or has been achieved to a reasonable degree, the District's decision shall be final.

1.05 PAYMENT FOR COSTS:

- A. Cost caused by ill-timed or defective Work or Work not conforming to Contract Documents, including costs for additional services of the District, its consultants, including but not limited to the Construction Manager, the Architect, the Project Inspector(s), Engineers, and Agents, will be paid by Contractor and/or deducted from the Contract by the District.
- B. District shall only pay for cost of Work if it is part of the original Contract Price or if a change has been made to the contract in compliance with the provisions of the General Conditions. Cost of Work performed upon instructions from the District, other than defective or nonconforming Work, will be paid by District on approval of written Change Order. Contractor shall provide written cost proposals prior to proceeding with cutting and patching.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Contractor shall provide for replacement and restoration of Work removed. Contractor shall comply with the Contract Documents and with the Industry Standard(s), for the type of Work, and the Specification requirements for each specific product involved. If not specified, Contractor shall first recommend a product of a manufacturer or appropriate trade association for approval by the District.
- B. Materials to be cut and patched include those damaged by the performance of the Work.

PART 3 – EXECUTION

3.01 INSPECTION:

- A. Contractor shall inspect existing conditions of the Site and the Work, including elements subject to movement or damage during cutting and patching, excavating and backfilling. After uncovering Work, Contractor shall inspect conditions affecting installation of new products.

- B. Contractor shall report unsatisfactory or questionable conditions in writing to District as indicated in the General Conditions and shall proceed with Work as indicated in the General Conditions by District.

3.02 PREPARATION:

- A. Contractor shall provide shoring, bracing and supports as required to maintain structural integrity for all portions of the Project, including all requirements of the Project.
- B. Contractor shall provide devices and methods to protect other portions of Project from damage.
- C. Contractor shall, provide all necessary protection from weather and extremes of temperature and humidity for the Project, including without limitation, any work that may be exposed by cutting and patching Work. Contractor shall keep excavations free from water.

3.03 ERECTION, INSTALLATION AND APPLICATION:

- A. With respect to performance, Contractor shall:
 - (1) Execute fitting and adjustment of products to provide finished installation to comply with and match specified tolerances and finishes.
 - (2) Execute cutting and demolition by methods that will prevent damage to other Work, and provide proper surfaces to receive installation of repairs and new Work.
 - (3) Execute cutting, demolition excavating, and backfilling by methods that will prevent damage to other Work and damage from settlement.
- B. Contractor shall employ original installer or fabricator to perform cutting and patching for:
 - (1) Weather-exposed surfaces and moisture-resistant elements such as roofing, sheet metal, sealants, waterproofing, and other trades.
 - (2) Sight-exposed finished surfaces.
- C. Contractor shall execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances, and finishes as shown or specified in the Contract Documents including, without limitation, the Drawings and Specifications.
- D. Contractor shall fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces. Contractor shall conform to all Code requirements for penetrations or the Drawings and Specifications, whichever calls for a higher quality or more thorough requirement. Contractor shall maintain integrity of both rated and non-rated fire walls, ceilings, floors, etc.
- E. Contractor shall restore Work which has been cut or removed. Contractor shall install new products to provide completed Work in accordance with

requirements of the Contract Documents and as required to match surrounding areas and surfaces.

- F. Contractor shall refinish all continuous surfaces to nearest intersection as necessary to match the existing finish to any new finish.

END OF DOCUMENT

ALTERATION PROJECT PROCEDURES

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Integration of Work, Purchase of Materials and Equipment, Uncovering of Work and Non-conforming Work and Correction of Work and Trenches;
- B. Special Conditions.

PART 2 - PRODUCTS

2.01 PRODUCTS FOR PATCHING AND EXTENDING WORK:

- A. New Materials: As specified in the Contract Documents including, without limitation, in the Specifications, Contractor shall match existing products, conditions, and work for patching and extending work.
- B. Type and Quality of Existing Products: Contractor shall determine by inspection, by testing products where necessary, by referring to existing conditions and to the Work as a standard.

PART 3 - EXECUTION

3.01 EXAMINATION:

- A. Contractor shall verify that demolition is complete and that areas are ready for installation of new Work.
- B. By beginning restoration Work, Contractor acknowledges and accepts the existing conditions.

3.02 PREPARATION:

- A. Contractor shall cut, move, or remove items as necessary for access to alterations and renovation Work. Contractor shall replace and restore these at completion.
- B. Contractor shall remove unsuitable material not as salvage unless otherwise indicated in the Contract Documents. Unsuitable material may include, without limitation, rotted wood, corroded metals, and deteriorated masonry and concrete. Contractor shall replace materials as specified for finished Work.

- C. Contractor shall remove debris and abandoned items from all areas of the Site and from concealed spaces.
- D. Contractor shall prepare surface and remove surface finishes to provide for proper installation of new Work and finishes.
- E. Contractor shall close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity. Contractor shall insulate ductwork and piping to prevent condensation in exposed areas. Contractor shall insulate building cavities for thermal and/or acoustical protection, as detailed.

3.03 INSTALLATION:

- A. Contractor shall coordinate Work of all alternations and renovations to expedite completion and to accommodate District occupancy.
- B. Designated Areas and Finishes: Contractor shall complete all installations in all respects, including operational, mechanical work and electrical work.
- C. Contractor shall remove, cut, and patch Work in a manner to minimize damage and to provide a means of restoring Products and finishes to original or specified condition.
- D. Contractor shall refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat and square or straight transition to adjacent finishes.
- E. Contractor shall install products as specified in the Contract Documents, including without limitation, the Specifications.

3.04 TRANSITIONS:

- A. Where new Work abuts or aligns with existing, Contractor shall perform a smooth and even transition. Patched Work must match existing adjacent work in texture and appearance.
- B. When finished surfaces are cut so that a smooth transition with new Work is not possible, Contractor shall terminate existing surface along a straight line at a natural line of division and make a recommendation for resolution to the District and the Architect for review and approval.

3.05 ADJUSTMENTS:

- A. Where removal of partitions or walls results in adjacent spaces becoming one, Contractor shall rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.
- B. Where a change of plane of 1/4 inch or more occurs, Contractor shall submit a recommendation for providing a smooth transition to the District and the Architect for review and approval.

- C. Contractor shall trim and seal existing wood doors and shall trim and paint metal doors as necessary to clear new floor finish and refinish trim as required.
- D. Contractor shall fit Work at penetrations of surfaces.

3.06 REPAIR OF DAMAGED SURFACES:

- A. Contractor shall patch or replace portions of existing surfaces, which are damaged, lifted, discolored, or showing other imperfections, in the area where the Work is performed.
- B. Contractor shall repair substrate prior to patching finish.

3.07 CULTIVATED AREAS AND OTHER SURFACE IMPROVEMENTS:

- A. Cultivated or planted areas and other surface improvements which are damaged by actions of the Contractor shall be restored by Contractor to their original condition or better, where indicated.
- B. Contractor shall protect and replace, if damaged, all existing guard posts, barricades, and fences.
- C. Contractor shall give special attention to avoid damaging or killing trees, bushes and/or shrubs on the Premises and/or identified in the Contract Documents, including without limitation, the Drawings.

3.08 FINISHES:

- A. Contractor shall finish surfaces as specified in the Contract Documents, including without limitations, the provisions of all Divisions of the Specifications.
- B. Contractor shall finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, Contractor shall refinish entire surface to nearest intersections.

3.09 CLEANING:

- A. Contractor shall continually clean the Site and the Premises as indicated in the Contract Documents, including without limitation, the provisions in the General Conditions and the Specifications regarding cleaning.

END OF DOCUMENT

CONTRACT CLOSEOUT AND FINAL CLEANING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Completion of Work;
- B. Special Conditions;
- C. Temporary Facilities and Controls.

1.02 CLOSEOUT PROCEDURES

Contractor shall comply with all closeout provisions as indicated in the General Conditions.

1.03 FINAL CLEANING

- A. Contractor shall execute final cleaning prior to final inspection.
- B. Contractor shall clean interior and exterior glass and all surfaces exposed to view; remove temporary labels, tape, stains, and foreign substances, polish transparent and glossy surfaces, wax and polish new vinyl floor surfaces, vacuum carpeted and soft surfaces.
- C. Contractor shall clean equipment and fixtures to a sanitary condition.
- D. Contractor shall replace filters of operating equipment.
- E. Contractor shall clean debris from roofs, gutters, down spouts, and drainage systems.
- F. Contractor shall clean Site, sweep paved areas, and rake clean landscaped surfaces.
- G. Contractor shall remove waste and surplus materials, rubbish, and construction facilities from the Site and surrounding areas.

1.04 ADJUSTING

Contractor shall adjust operating products and equipment to ensure smooth and unhindered operation.

1.05 RECORD DOCUMENTS AND SHOP DRAWINGS

- A. Contractor shall legibly mark each item to record actual construction, including:
 - (1) Measured depths of foundation in relation to finish floor datum.
 - (2) Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permit surface improvements.
 - (3) Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - (4) Field changes of dimension and detail.
 - (5) Details not on original Contract Drawings
 - (6) Changes made by modification(s).
 - (7) References to related Shop Drawings and modifications.
- B. Contractor will provide one set of Record Drawings to District.
- C. Contractor shall submit all required documents to District and/or Architect prior to or with its final Application for Payment.

1.06 INSTRUCTION OF DISTRICT PERSONNEL

- A. Before final inspection, at agreed upon times, Contractor shall instruct District's designated personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. For equipment requiring seasonal operation, Contractor shall perform instructions for other seasons within six months or by the change of season.
- C. Contractor shall use operation and maintenance manuals as basis for instruction. Contractor shall review contents of manual with personnel in detail to explain all aspects of operation and maintenance.
- D. Contractor shall prepare and insert additional data in Operation and Maintenance Manual when the need for such data becomes apparent during instruction.
- E. Contractor shall review contents of manual with personnel in detail to explain all aspects of operation and maintenance.

1.07 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Contractor shall provide products, spare parts, maintenance, and extra materials in quantities specified in the Specifications and in Manufacturer's recommendations.

- B. Contractor shall provide District with all required Operation and Maintenance Data at one time. Partial or piecemeal submissions of Operation and Maintenance Data will not be accepted.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

OPERATION AND MAINTENANCE DATA

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Completion of the Work;
- B. Special Conditions.

1.02 QUALITY ASSURANCE:

Contractor shall prepare instructions and data by personnel experienced in maintenance and operation of described products.

1.03 FORMAT:

- A. Contractor shall prepare data in the form of an instructional manual entitled "OPERATIONS AND MAINTENANCE MANUAL & INSTRUCTIONS" ("Manual").
- B. Binders: Contractor shall use commercial quality, 8-1/2 by 11 inch, three-side rings, with durable plastic covers; two inch maximum ring size. When multiple binders are used, Contractor shall correlate data into related consistent groupings.
- C. Cover: Contractor shall identify each binder with typed or printed title "OPERATION AND MAINTENANCE MANUAL & INSTRUCTIONS"; and shall list title of Project and identify subject matter of contents.
- D. Contractor shall arrange content by systems process flow under section numbers and sequence of Table of Contents of the Contract Documents.
- E. Contractor shall provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- F. Text: The content shall include Manufacturer's printed data, or typewritten data on 24 pound paper.
- G. Drawings: Contractor shall provide with reinforced punched binder tab and shall bind in with text; folding larger drawings to size of text pages.

1.04 CONTENTS, EACH VOLUME:

- A. Table of Contents: Contractor shall provide title of Project; names, addresses, and telephone numbers of the Architect, any engineers, subconsultants, Subcontractor(s), and Contractor with name of responsible parties; and schedule of products and systems, indexed to content of the volume.

- B. For Each Product or System: Contractor shall list names, addresses, and telephone numbers of Subcontractor(s) and suppliers, including local source of supplies and replacement parts.
- C. Product Data: Contractor shall mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- D. Drawings: Contractor shall supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Contractor shall not use Project Record Documents as maintenance drawings.
- E. Text: Contractor shall include any and all information as required to supplement product data. Contractor shall provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
- F. Warranties and Bonds: Contractor shall bind in one copy of each.

1.05 MANUAL FOR MATERIALS AND FINISHES:

- A. Building Products, Applied Materials, and Finishes: Contractor shall include product data, with catalog number, size, composition, and color and texture designations. Contractor shall provide information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Contractor shall include Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture Protection and Weather Exposed Products: Contractor shall include product data listing applicable reference standards, chemical composition, and details of installation. Contractor shall provide recommendations for inspections, maintenance, and repair.
- D. Additional Requirements: Contractor shall include all additional requirements as specified in the Specifications.
- E. Contractor shall provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.06 MANUAL FOR EQUIPMENT AND SYSTEMS:

- A. Each Item of Equipment and Each System: Contractor shall include description of unit or system, and component parts and identify function, normal operating characteristics, and limiting conditions. Contractor shall include performance curves, with engineering data and tests, and complete nomenclature, and commercial number of replaceable parts.
- B. Panelboard Circuit Directories: Contractor shall provide electrical service characteristics, controls, and communications.

- C. Contractor shall include color coded wiring diagrams as installed.
- D. Operating Procedures: Contractor shall include start-up, break-in, and routine normal operating instructions and sequences. Contractor shall include regulation, control, stopping, shut-down, and emergency instructions. Contractor shall include summer, winter, and any special operating instructions.
- E. Maintenance Requirements: Contractor shall include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- F. Contractor shall provide servicing and lubrication schedule, and list of lubricants required.
- G. Contractor shall include manufacturer's printed operation and maintenance instructions.
- H. Contractor shall include sequence of operation by controls manufacturer.
- I. Contractor shall provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- J. Contractor shall provide control diagrams by controls manufacturer as installed.
- K. Contractor shall provide Contractor's coordination drawings, with color coded piping diagrams as installed.
- L. Contractor shall provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- M. Contractor shall provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- N. Additional Requirements: Contractor shall include all additional requirements as specified in Specification(s).
- O. Contractor shall provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.07 SUBMITTAL:

- A. Contractor shall submit to the District for review two (2) copies of preliminary draft or proposed formats and outlines of the contents of the Manual within thirty (30) days of Contractor's start of Work.
- B. For equipment, or component parts of equipment put into service during construction and to be operated by District, Contractor shall submit draft content for that portion of the Manual within ten (10) days after acceptance of that equipment or component.

- C. Contractor shall submit two (2) copies of a complete Manual in final form prior to final Application for Payment. Copy will be returned with Architect/Engineer comments. Contractor must revise the content of the Manual as required by District prior to District's approval of Contractor's final Application for Payment.
- D. Contractor must submit two (2) copies as well as a PDF in searchable and tabbed format in Specification Section order of revised Manual in final form within ten (10) days after final inspection.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

WARRANTIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Warranty/Guarantee Information;
- B. Special Conditions.

1.02 FORMAT

- A. Binders: Contractor shall use commercial quality, 8-1/2 by 11 inch, three-side rings, with durable plastic covers; two inch maximum ring size. Warranties will be in Specification Section order and shall also be submitted in PDF Format
- B. Cover: Contractor shall identify each binder with typed or printed title "WARRANTIES" and shall list title of Project.
- C. Table of Contents: Contractor shall provide title of Project; name, address, and telephone number of Contractor and equipment supplier; and name of responsible principal. Contractor shall identify each item with the number and title of the specific Specification, document, provision, or section in which the name of the product or work item is specified.
- D. Contractor shall separate each warranty with index tab sheets keyed to the Table of Contents listing, providing full information and using separate typed sheets as necessary. Contractor shall list each applicable and/or responsible Subcontractor(s), supplier(s), and/or manufacturer(s), with name, address, and telephone number of each responsible principal(s).

1.03 PREPARATION:

- A. Contractor shall obtain warranties, executed in duplicate by each applicable and/or responsible subcontractor(s), supplier(s), and manufacturer(s), within ten (10) days after completion of the applicable item or work. Except for items put into use with District's permission, Contractor shall leave date of beginning of time of warranty blank until the date of completion is determined.
- B. Contractor shall verify that documents are in proper form, contain full information, and are notarized, when required.
- C. Contractor shall co-execute submittals when required.

D. Contractor shall retain warranties until time specified for submittal.

1.04 TIME OF SUBMITTALS:

- A. For equipment or component parts of equipment put into service during construction with District's permission, Contractor shall submit a draft warranty for that equipment or component within ten (10) days after acceptance of that equipment or component.
- B. Contractor shall submit for District approval all warranties and related documents within ten (10) days after date of completion. Contractor must revise the warranties as required by the District prior to District's approval of Contractor's final Application for Payment.
- C. For items of work delayed beyond date of completion, Contractor shall provide an updated submittal within ten (10) days after acceptance, listing the date of acceptance as start of warranty period.

PART 2 - PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

RECORD DOCUMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Documents on Work;
- B. Special Conditions.

PART 2 - RECORD DRAWINGS

2.01 GENERAL:

- A. As indicated in the Contract Documents, the District will provide Contractor with one set of reproducible, full size original Contract Drawings.
- B. Contractor shall maintain at each Project Site one set of marked-up plans and shall transfer all changes and information to those marked-up plans, as often as required in the Contract Documents, but in no case less than once each month. Contractor shall submit to the Project Inspector one set of reproducible Project Record Drawings ("As-Builts") showing all changes incorporated into the Work since the preceding monthly submittal. The As-Builts shall be available at the Project Site. The Contractor shall submit reproducible drawings at the conclusion of the Project following review of the blueline prints.
- C. Label and date each Record Drawing "RECORD DOCUMENT" in legibly printed letters.
- D. All deviations in construction, including but not limited to pipe and conduit locations and deviations caused by without limitation Change Orders, Construction Claim Directives, RFI's, and Addenda, shall be accurately and legibly recorded by Contractor.
- E. Locations and changes shall be done by Contractor in a neat and legible manner and, where applicable, indicated by drawing a "cloud" around the changed or additional information.

2.02 RECORD DRAWING INFORMATION:

- A. Contractor shall record the following information:
 - (1) Locations of Work buried under or outside each building, including, without limitation, all utilities, plumbing and electrical lines, and conduits.

- (2) Actual numbering of each electrical circuit to match panel schedule.
- (3) Locations of significant Work concealed inside each building whose general locations are changed from those shown on the Contract Drawings.
- (4) Locations of all items, not necessarily concealed, which vary from the Contract Documents.
- (5) Installed location of all cathodic protection anodes.
- (6) Deviations from the sizes, locations, and other features of installations shown in the Contract Documents.
- (7) Locations of underground work, points of connection with existing utilities, changes in direction, valves, manholes, catch basins, capped stubouts, invert elevations, etc.
- (8) Sufficient information to locate Work concealed in each building with reasonable ease and accuracy.

In some instances, this information may be recorded by dimension. In other instances, it may be recorded in relation to the spaces in the building near which it was installed.

- B. Contractor shall provide additional drawings as necessary for clarification.
- C. Contractor shall provide reproducible record drawings, made from final Shop Drawings marked "No Exceptions Taken" or "Approved as Noted."
- D. After review and approval of the marked-up specifications by the Project Inspector, Contractor shall provide electronic copies of the drawings (in PDF format) with one file with all of the sheets and one set of individual sheet files at the conclusion of the Project.

PART 3 - RECORD SPECIFICATIONS

3.01 GENERAL:

- A. Contractor shall mark each section legibly to record manufacturer, trade name, catalog number, and supplier of each Product and item of equipment actually installed.
- B. After review and approval of the marked-up specifications by the Project Inspector, Contractor shall provide one electronic copy of the specifications (in PDF format) at the conclusion of the Project.

PART 4 - MAINTENANCE OF RECORD DOCUMENTS

4.01 GENERAL

- A. Contractor shall store Record Documents apart from documents used for construction as follows:

- (1) Provide files and racks for storage of Record Documents.
- (2) Maintain Record Documents in a clean, dry, legible condition and in good order.

B. Contractor shall not use Record Documents for construction purposes.

PART 5 – PRODUCTS Not Used.

END OF DOCUMENT

SECTION 01 57 23

STORMWATER POLLUTION PREVENTION

PART 1 - GENERAL

1.01 SUMMARY

- A. Construction shall adhere with the requirements of the California State Water Resource Control Board, General Permit for Storm Water Discharges Associated with Industrial Activities (General Permit). Project construction is covered under the General Permit WDID#: _____.
- B. The project Stormwater Pollution Prevention Plan (SWPPP) applies to operations within the limits of work and adjacent points of discharge that may be outside the limits of work. The SWPPP describes the proposed facilities, identifies potential sources of pollution and recommends appropriate Best Management Practices (BMPs) to reduce the discharge of pollutants. The contractor shall be strictly held to the requirements of the General Permit and shall provide the services of Qualified Stormwater Practitioner (QSP) as the agent to the District, who is the Legally Responsible Person (LRP).
- C. Scope of work:
Provide such work to satisfy the requirements of the General Permit including but not limited to:
1. Qualified Stormwater Practitioner (QSP) services.
 2. Install, adjust and maintain all necessary; BMPs, non-stormwater pollutants, safe storage, hazardous material controls and construction activities to protect discharge with best available technology.
 3. Monitoring, testing and action plans as required by the project SWPPP Document.
 4. Amend the SWPPP whenever there is a change in construction or operations that will affect the discharge of pollutants, or change in schedule delaying completion of grading activities beyond completion date identified in the project SWPPP.
 5. All necessary data entry submit documentation to the Storm Water Multiple Application and Report Tracking System (SMARTS) during construction and closeout.
- D. Related sections can include, but may not be limited to the following:
1. Section 01 50 00 - Construction Facilities and Temporary Controls
 2. Section 02 41 00 - Site Clearing and Demolition
 3. Section 31 20 00 - Earthwork
 4. Section 33 40 00 - Storm Drainage

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. California State Board of Water Resources Construction General Permit Order 2009-0009-DWQ
- A. SWPPP Document WDID#_____

- B. California Stormwater Quality Association (CASQA) Industrial and Commercial BMP Handbook.

1.03 MONITORING AND TESTING:

- A. Monitoring, testing, and action plans documentation required by the project SWPPP Document, and/or as required by the General Permit.

PART 2 - PRODUCTS – NOT APPLICABLE

PART 3 - EXECUTION

3.01 PREPARATION, MONITORING AND DOCUMENTATION

- A. Prior to installing any portion of the work, the contractor shall examine the site and verify that site conditions are acceptable to begin work.
- B. Prior to grading and demolition operations, the contractor shall install and manage all necessary BMPs with best available technology, making all necessary adjustments for the duration of construction.
- C. Contractor shall be responsible for all necessary, modifications and additions to the BMPs and site conditions to meet the requirements of the General Permit at no additional cost to the District.
- D. Regardless of construction schedule or weather conditions, it shall be the contractor's responsibility to; provide all necessary measures, adjust BMPs, protect discharge from pollutants and take necessary actions should numeric action levels be triggered, at no additional cost to the District.
- E. Contractor shall provide QSP to conduct all monitoring and testing and prepare action plans as required by the project SWPPP.
- F. The contractor shall amend the SWPPP and prepare the COI whenever there is a change in construction or operations that will affect the discharge of pollutants or change in schedule that will delay completion of grading activities beyond completion date identified in the project SWPPP.
- G. Contractor shall prepare, track and submit all necessary documentation to SMARTS during construction and closeout. This shall include filing all required Ad Hoc reports, Annual Reports, and the Notice of Termination on the SMARTS site.

END OF SECTION

SECTION 01 71 23

FIELD ENGINEERING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Field engineering services for proper completion of the Work including, but not necessarily limited to:
 - 1. Establishing and maintaining lines and levels.
 - 2. Structural design of shoring, forms, and similar items provided by the Contractor as part of its means and methods of construction.
 - 3. Excavations and elevations, footings and piers required for installation of work items.
 - 4. Establishing horizontal and vertical control for site construction items.
- B. Related Requirements:
 - 1. Section 01 78 29 - Conformance Survey

1.02 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Informational submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.

1.03 INFORMATIONAL SUBMITTALS

- A. Name and address of surveyor or professional engineer to the Owner's Representative.
- B. Upon request of the Owner's Representative, submit:
 - 1. Data demonstrating qualifications of persons proposed to be engaged for field engineering services.
 - 2. Documentation verifying accuracy of field engineering work.
 - 3. Certification, signed by the Contractor's retained field engineer, certifying that elevations and locations of improvements are in conformance or nonconformance with requirements of the Contract Documents.

1.04 QUALITY ASSURANCE

- A. Contractor shall employ a California Registered Civil Engineer or Licensed Land Surveyor, hereafter referred to as Surveyor, to lay out the entire work and set grades, lines, levels, and positions throughout the site.

1.05 SURVEY REFERENCE POINTS

- A. Existing horizontal and vertical control points for the Project are those designated on the Drawings. Locate and protect these control points prior to starting site work and preserve permanent reference points during construction.
- B. Do not change or relocate reference points or items of the work without specific review and acceptance by the Owner's Representative.
- C. Promptly advise the Owner's Representative when a reference point is lost, destroyed, or requires relocation because of other changes in the work. Upon direction of the Owner's Representative, replace reference stakes or markers according to the original or appropriate survey control.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 LAYING OUT THE WORK

- A. Prior to beginning work, locate or set all general reference points, benchmarks, establish monuments and take action as necessary to prevent their destruction, then layout all lines, elevations, and measurements for entire work.
- B. Verify figures and dimensions shown on the Drawings and son surveys furnished by the Owner before starting work. Notify the Owner's Representative immediately of any discrepancies and re-direct work to avoid delay.
 - 1. Contractor shall accept responsibility for errors resulting from failure to notify Owner's Representative of known discrepancies.
 - 2. Offsets will be as agreed upon, in writing, by the Contractor and the Owner's Representative.
- C. Establish monuments on curbs, manholes or pavements with concrete embedded steel pipe with lead plug and/or brass nail with washer, as acceptable to the Owner's Representative.
- D. Verify layout from time to time as work progresses.

3.02 RECORDS

- A. Maintain a complete and accurate log of all control and survey Work as it progresses in accordance with the requirements of Section 01 78 39 - Project Record Documents. Show exact locations of the monuments if any are disrupted or destroyed.

END OF SECTION

SECTION 01 78 29

CONFORMANCE SURVEY

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Conformance surveying required for proper completion of the work including, but not necessarily limited to, the following:
 - 1. Synthetic turf construction, including subgrade and base preparation.
 - 2. Natural turf field construction.
 - 3. Other applicable Project components.

- B. Related Requirements:
 - 1. Section 01 33 00 – Submittal Procedures
 - 2. Section 01 71 23 – Field Engineering
 - 3. Section 01 78 39 – Project Record Drawings
 - 4. Section 31 20 00 – Earth Moving
 - 5. Section 32 11 00 – Base Courses
 - 6. Section 32 12 16 – Asphalt Paving
 - 7. Section 32 18 13 – Synthetic Turf Playing Field
 - 8. Section 32 90 00 – Planting

1.02 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action and Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.

1.03 ACTION SUBMITTALS

- A. Conformance Survey: In addition to required prints, submit 1 electronic copy in AutoCAD or scaled PDF image of all conformance surveys for the Project. Review response by the Owner Representative shall identify any areas out of tolerance.

1.04 INFORMATIONAL SUBMITTALS

- A. Name and address of Contractor's licensed surveyor to the Owner's Representative.

1.05 QUALITY CONTROL AND REWORK

- A. Contractor shall retain a California Licensed Land Surveyor to obtain survey data and supervise preparation of the Conformance Surveys as specified.

- B. Portions of a survey that does not conform to the grading tolerance requirements identified in this Section will be corrected by the Contractor at its expense. Areas out of conformance shall be resurveyed at the Contractor's expense by its Surveyor. Revised points shall be added to the original digital file for resubmittal, review, and acceptance by the Owner Representative.

- C. Delays and costs incurred due to grades out of conformance are the sole responsibility of the Contractor. At any time during construction and following acceptance of a portion of the survey by the Owner, the Owner reserves the right to recheck the surface grades at its expense to verify it is still in conformance.

- D. It is the Contractor's responsibility to protect the grading and compaction tolerances of surveyed surfaces after Conformance Surveying operations are complete and accepted, and prior to installation of subsequent materials.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 LAYING OUT THE WORK

- A. Prior to beginning work, Contractor shall secure the electronic grading plan from the Owner for use by the Surveyor.
- B. The Contractor's Surveyor shall provide all conformance survey drawings. The drawings shall provide both the design elevations and the as-constructed spot elevations. These elevations shall be for comparison to those on the Contract Documents for the same location. Contractor shall also show the difference in these two numbers. Unique reference numbers shall be assigned to each point for reference purposes. For spacing requirements, refer to specific type of improvement identified in this Section.
- C. Accuracy of the Contractor's surveys provided under this Section shall be to 0.01 feet.
- D. The Contractor's Licensed Surveyor shall provide all conformance survey drawings and all 25-foot grid or other grid conformance grades based on the designed grades shown on the Drawings.

3.02 SYNTHETIC TURF SUBGRADE AND BASE CONFORMANCE SURVEYING

- A. General: The stone grades shall not vary from the specified grades more than 1/4-inch (0.02) feet at any location when measured in any direction. In addition, no two adjacent points within the grid shall cumulatively deviate more than 1/2-inch (0.04 feet) from point to point of the design grades.
- B. Subgrade:
 - 1. Contractor shall verify that subgrade has been prepared according to the Specifications with regard to compaction and grade tolerances and is free of debris, non-compactable material, topsoil, or organics prior to beginning work.
 - 2. Prior to acceptance of the subgrade, a Conformance Survey shall be prepared by the Contractor and a digital file submitted to the Owner Representative as specified. The survey shall be based on a 20-foot grid showing the field crown, the center of the subgrade elevation of the subdrain trench edges, perimeter of the field at edge finish grade and curb finish surface. The plan shall show the comparison of the design grades versus the as-constructed grades.
 - 3. Top of subgrade elevations shall be verified using laser-operation survey instruments. Grades at each point shall be within plus or minus 1/2-inch (0.04 feet) from the elevations shown on the Drawings. In addition, no two adjacent points within the grid shall cumulatively deviate more than 3/4-inch (0.06 feet) from the respective points' design grades.
- C. Completed Stone Base:
 - 1. Prior to acceptance of the stone base, a Conformance Survey will be prepared by the Contractor's Surveyor and submitted by the Contractor to the Owner's Representative as specified.
 - 2. The survey shall be based on a 25-foot grid showing the field crown, perimeter of the field and adjacent curb edge.
 - 3. The survey plan shall show the comparison of the design grades versus the as-constructed grades.
 - 4. A portion of the survey that does not conform to the requirements identified above shall be corrected by the Contractor.

- a. Areas out of conformance shall be resurveyed following the identical procedure stated above by the Surveyor, and these revised points shall be added to the original digital file for review and acceptance by the Owner's Representative.
 - b. Delays and costs incurred due to grades out of conformance are the sole responsibility of the Contractor.
5. It is the Contractor's responsibility to protect the grading and compaction tolerances of the base after conformance survey is complete and prior to installation of the synthetic turf.
- D. Finish surface planarity shall be verified, and if necessary adjusted, by the Contractor using the string line method.
1. A mason's line held taught between two workers separated by a distance of approximately 40 feet shall be placed directly on the finished surface parallel to the direction of greatest slope.
 2. A third worker shall check for separations between the mason's line and the finished surface that are equal to or greater than the specified tolerances.
 3. Entire finished surface shall be "walked" with mason's line in increments of approximately 3 feet.
 4. Areas of separation shall be outlined with marking paint and the depth of separation indicated.

3.03 NATURAL TURF (NATIVE SOIL) ATHLETIC FIELD CONFORMANCE SURVEYING REQUIREMENTS

- A. Pre-Turf Installation:
1. Upon successful installation of the edges of the natural turf transition edges and the installation of irrigation, drainage, and other various utility systems, as well as the final soil amendment incorporation and fine grading, the Contractor shall verify the proper horizontal and vertical controls of the prepared rootzone. This quality control process shall be completed by a Licensed Surveyor.
 2. The field natural turf area shall be shot on a maximum 20 foot spacing using laser surveying equipment capable of accuracy to 0.01 feet.
 3. The survey results shall be deemed acceptable when the results show that the field has no field surveyed grade points greater than 3/4 inch (0.06 feet) outside its design grade elevation.
 4. Areas where repairs and corrections are made after the survey has been completed shall be resurveyed at the Contractor's expense.
- B. Post-Turf Installation:
1. Upon acceptance of the pre-turf installation conformance survey, Contractor shall install the specified turf material.
 2. If directed by the Owner, the Contractor shall survey the turf prior to final acceptance as outlined above to ensure the turf areas are in compliance with the Contract and specified tolerances.

END OF SECTION

SECTION 02 41 13

SITE CLEARING AND DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Site clearing and demolition work and related activities as shown on the Drawings and specified herein. The general extent of the site clearing and demolition work includes, but is not necessarily limited to, the following:
1. Demolition, removal and disposal of designated items.
 2. Careful removal, protection and re-installation of designated items.
 3. Careful removal and salvage of designated items.
 4. Disconnection and capping of existing utility and irrigation lines.
 5. Incidental demolition of abandoned utility and irrigation lines.
 6. Spraying until dead, clearing, grubbing vegetated areas in existing turf areas.
 7. Protection of existing plant material.
 8. Removal of designated trees and planting areas.
- B. Related Requirements:
1. Section 31 20 00 - Earth Moving
 2. Section 32 01 90 - Existing Tree Protection and Maintenance

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. State of California, Business and Transportation Agency, Department of Transportation (Caltrans) "Standard Specifications."

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.

1.04 ACTION SUBMITTALS

- A. Product Data: Manufacturer's product information on herbicides to be used for approval prior to use.

1.05 INFORMATIONAL SUBMITTALS

- A. Schedule: Indicate the proposed timeline for site clearing and demolition work including shut off times and capping of utility services on the project schedule.

1.06 QUALITY ASSURANCE

- A. The Owner will obtain and pay for all permits required in connection with this work. Fees for the dumping of debris shall be paid for by the Contractor.

1.07 FIELD CONDITIONS

- A. Dust Control:
1. The Contractor shall prevent the formation of airborne dust on and around the project site with the use of sprinkled water or other means acceptable to the Owner's Representative. Non-compliance

with proper dust control measures may be grounds for issuance of a "stop work" order by the Owner until satisfactory measures are implemented.

- B. Utility Services:
 - 1. Issue written notices of planned demolition operations to utility companies and coordinate site clearing and demolition improvements as requested by the utility companies.
 - 2. Existing power poles and lines serving existing occupied buildings shall remain. Arrange work in order to maintain utilities not designated for removal.
 - 3. Coordinate work in order to maintain utilities to temporary on-site facilities.

PART 2 - PRODUCTS

2.01 HERBICIDES

- A. Herbicides shall conform to Owner's approved chemicals list.
- B. Herbicide shall be non-selective broad-spectrum systemic herbicide for perennial vegetation and straight contact herbicide for annual vegetation in accordance with a licensed pest control advisor or herbicide manufacturers' recommendations.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Conform to applicable requirements of Section 01 45 00 - Quality Control.
- B. Carefully identify limits of demolition and site clearing.
- C. Mark project areas in coordination with the Owner's Representative and as necessary to clearly identify the interface of items to be removed and items remain.

3.02 PREPARATION

- A. Protection:
 - 1. Make provisions and take necessary precautions to protect all existing items not designated for removal. An existing item or area damaged during construction operations shall be replaced or repaired to an "as-was" or better condition at no additional cost to the Owner and subject to the acceptance of the Owner's Representative.
 - 2. Erect barriers, fences, guard rails, enclosures, chutes, and shoring as necessary to protect personnel, structures, and utilities to remain.
 - 3. Provide warning signs and lighting as necessary for vehicular and personnel protection. Maintain warning signs during construction as required by applicable safety ordinances and as reasonably prudent.
 - 4. Coordinate arrangements for items to be salvaged and turned over to the Owner.
 - 5. Notify Underground Service Alert (USA), (800) 640-5137, and local utility companies to verify locations of existing utilities a minimum of 48 hours prior to beginning work.
 - 6. Provide tree protection fencing prior to commencing demolition and site clearing work.
- B. Traffic Access:
 - 1. Ensure minimum interference with roads, streets, driveways, sidewalk and adjacent facilities.
 - 2. Do not close or obstruct streets, sidewalk, alleys or passageways without acceptance from the Owner's Representative or governing authorities as applicable.

3. Provide approved alternate routes around closed or obstructed traffic ways as required by the Owner's Representative.
4. Maintain access to adjacent existing buildings to ensure uninterrupted operations during demolition work.

3.03 DEMOLITION

- A. General: Refer to the Drawings for extent of demolition and site clearing work.
- B. Paving: Demolish paving in accordance with local noise ordinance regulations and as acceptable to the Owner's Representative.
- C. Filling:
 1. Completely fill below-grade areas and voids resulting from demolition work.
 2. Install appropriate, acceptable fill material consisting of soil, gravel, or sand, free of trash and debris, stones over 6-inch diameter, roots, or other organic matter. Meet fill and compaction requirements specified and recommended by the Owner's Geotechnical Engineer.
- D. If unanticipated mechanical, electrical or structural elements which conflict with intended function or design are encountered, investigate and measure both the nature and extent of the conflict. Submit report to Owner's Representative in written, accurate detail. Pending receipt of response from Owner's Representative, rearrange selective demolition and site clearing schedule as necessary to continue overall job progress without delay.

3.04 CLEARING AND GRUBBING

- A. Remove trees as shown on Drawings. Removal shall include trunks and roots over 1 inch in diameter to a depth of 18 inches below subgrade elevations.
- B. Mow all existing turf areas to a height of 1 inch and remove cuttings.
- C. Prior to site clearing, existing vegetation below 12 inches in height and turf areas to be removed shall be sprayed with a non-selective broad spectrum systemic herbicide for perennial vegetation and straight contact herbicide for annual vegetation in accordance with a licensed pest control advisor or herbicide manufacturers recommendations.
- D. Allow a sufficient period of time to ensure that all sprayed vegetation is dead. Refer to manufacturer's recommendations.
- E. Irrigation heads, valves, and controllers shall be salvaged and provided to Owner.
- F. Clear and strip vegetative material from soil surface and remove unless noted otherwise. Existing turf areas to be removed need not be stripped, but may be cross-ripped in two opposite directions and roto-tilled into the ground to a minimum 6-inch depth. Remaining clods of turf shall be no larger than 2 inches in diameter.
- G. Clear/strip vegetative material from soil surface and remove unless noted otherwise. Existing turf areas to be removed need to be stripped to remove organic soil.
- H. Contractor is responsible for stockpiling and protecting all topsoil needed for landscaping improvements. Refer to respective earthwork and landscape Specifications.
- I. Utilities and Related Equipment:
 1. The locations of existing utilities, as may be shown on the Drawings, are approximate. Should existing utilities not shown on the Drawings be encountered during construction operations, notify the

- Owner's Representative immediately, and re-direct work to avoid delay. The Owner's Representative will then determine what action, if any, is required.
2. Remove abandoned utilities as indicated and as uncovered by the work and terminate in a manner conforming to code.
 3. Remove and salvage designated items and related equipment and deliver to a location acceptable to the Owner's Representative.

J. Underground Piping:

1. Existing storm drain and irrigation systems, as may be shown on the Drawings, shall be modified to allow for construction of new items and systems as a part of this project. Caution shall be exercised so as not to damage underground piping not scheduled for removal.
2. Remove underground piping as indicated or necessary and backfill to specified compaction density.
3. Existing piping abandoned but not removed shall be backfilled with slurry fill (grout), and ends shall be capped with concrete.
4. Manholes and lines scheduled for removal which connect to active systems shall have their active remaining portions capped, plugged, or blind-flanged as appropriate.
5. Materials used for pipe terminations and temporary connections shall be the same as the existing lines. Fittings and flanges shall be of weight and class suitable for the service in which used.

3.05 SALVAGE

A. Demolition:

1. Materials or equipment to be demolished shall become the property of the Contractor except for items specified or noted on the Drawings to be salvaged for the Owner.
2. Carefully remove items to be salvaged to avoid damage.
3. Irrigation heads, valves and existing controller shall be salvaged and provided to Owner. Contractor shall clean and box items. Items shall be returned to Owner in accordance with instructions provided by the Owner.

B. Replacement: In the event items not scheduled to be demolished are damaged, promptly replace or repair such items to an as-was or better condition per the discretion of the Owner's Representative at no additional cost to Owner.

C. Materials scheduled for removal shall not be placed on view to prospective purchasers or sold on site.

3.06 CLEANING

A. Debris and Rubbish:

1. Remove and transport debris and rubbish as it accumulates and dispose in a legal manner via recognized haul routes in accordance with Section 01 50 00 - Temporary Facilities and Controls in a manner that will prevent spillage on streets or adjacent areas.
2. Remove tools, equipment and appliances used for demolition from the site upon completion of the work.
3. Clean entire project area, adjacent streets, and pavements to a broom-clean, "stain-free" condition per the discretion of the Owner's Representative.

END OF SECTION

SECTION 08 11 13

HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes hollow-metal work.
- B. Related Requirements:
 - 1. Section 01 33 00 – Submittal Procedures
 - 2. Section 08 71 00 – Finish Hardware
 - 3. Section 09 91 15 – Exterior Site Painting

1.03 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM- HMMA 803 or SDI A250.8.

1.04 COORDINATION

- A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.05 SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, core descriptions, and finishes.
- B. Installation Instructions: Manufacturer's written installation instructions for each type of product.
- C. Shop Drawings: Include the following:
 - 1. Elevations of each door type.
 - 2. Details of doors, including vertical- and horizontal-edge details and metal thicknesses.
 - 3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
 - 4. Locations of reinforcement and preparations for hardware.
 - 5. Details of each different wall opening condition.
 - 6. Details of anchorages, joints, field splices, and connections.
 - 7. Details of accessories.
 - 8. Details of moldings, removable stops, and glazing.
 - 9. Details of conduit and preparations for power, signal, and control systems.

- D. Schedule: Provide a schedule of hollow-metal work prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final Door Hardware Schedule.
- E. Product Test Reports: For each type of hollow-metal door and frame assembly, for tests performed by a qualified testing agency.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow-metal work palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow-metal work vertically under cover at Project site with head up. Place on minimum 4-inch- high wood blocking. Provide minimum 1/4-inch space between each stacked door & frame to permit air circulation.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Ceco Door Products; an Assa Abloy Group company.
 - 2. Door Components, Inc.
 - 3. Curries Company; an Assa Abloy Group company.
 - 4. Mesker Door Inc.
 - 5. Pioneer Industries, Inc.; an Assa Abloy Group company
 - 6. Security Metal Products Corp.; an Assa Abloy Group company
 - 7. Steelcraft; an Ingersoll-Rand company.
- B. Source Limitations: Obtain hollow-metal work from single source from single manufacturer.

2.02 INTERIOR DOORS AND FRAMES

- A. Construct interior doors and frames to comply with the standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- B. Extra-Heavy-Duty Doors and Frames: SDI A250.8, Level 3.
 - 1. Physical Performance: Level A according to SDI A250.4.
 - 2. Doors:
 - a. Type: As indicated in the Door Schedule on drawings.
 - b. Thickness: 1-3/4 inches.
 - c. Face: Metallic-coated, cold-rolled steel sheet, minimum thickness of 0.053 inch (16 gauge).
 - d. Edge Construction: Model 2, Seamless.
 - e. Core: Polyurethane.
 - 3. Frames:
 - a. Materials: Metallic-coated, steel sheet, minimum thickness of 0.067 inch (14 gauge).
 - b. Construction: Full profile welded.
 - 4. Exposed Finish: Prime.

2.03 EXTERIOR HOLLOW-METAL DOORS AND FRAMES

- A. Construct exterior doors and frames to comply with the standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- B. Extra-Heavy-Duty Doors and Frames: SDI A250.8, Level 3.
 - 1. Physical Performance: Level A according to SDI A250.4.
 - 2. Doors:
 - a. Type: As indicated in the Door Schedule on drawings.
 - b. Thickness: 1-3/4 inches
 - c. Face: Metallic-coated steel sheet, minimum thickness of 0.053 inch (16 gauge), with minimum A60 coating.
 - d. Edge Construction: Model 2, Seamless.
 - e. Core: Polyurethane.
 - 1) Thermal-Rated Doors: Provide doors fabricated with thermal-resistance value (R-value) of not less than R-11 when tested according to ASTM C 518.
 - 3. Frames:
 - a. Materials: Metallic-coated steel sheet, minimum thickness of 0.067 inch (14 gauge), with minimum A60 coating.
 - b. Construction: Full profile welded. (Custom shape, see drawings for profile.)
 - 4. Exposed Finish: Prime.

2.04 HOLLOW-METAL PANELS

- A. Provide hollow-metal panels of same materials, construction, and finish as adjacent door assemblies.

2.05 FRAME ANCHORS

- A. Jamb Anchors:
 - 1. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch thick.
- B. Floor Anchors: Formed from same material as frames, minimum thickness of 0.042 inch, and as follows:
 - 1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.

2.06 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A 1011, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- C. Metallic-Coated Steel Sheet: ASTM A 653, Commercial Steel (CS), Type B.
- D. Frame Anchors: ASTM A 879, Commercial Steel (CS), 04Z coating designation; mill phosphatized.
 - 1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008 or ASTM A 1011, hot-dip galvanized according to ASTM A 153, Class B.
- E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153.
- F. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.

- G. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.
- H. Glazing: Comply with requirements in Section 08 80 00 "Glazing."

2.07 FABRICATION

- A. Fabricate hollow-metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for metal thickness. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.
- B. Hollow-Metal Doors:
 - 1. Vertical Edges for Single-Acting Doors: Bevel edges 1/8 inch in 2 inches.
 - 2. Top Edge Closures: Close top edges of doors with flush closures of same material as face sheets.
 - 3. Bottom Edge Closures: Close bottom edges of doors with end closures or channels of same material as face sheets.
 - 4. Exterior Doors: Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.
- C. Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
 - 1. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
 - 2. Provide flat -head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 - 3. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
 - 4. Floor Anchors: Weld anchors to bottoms of jambs with at least four spot welds per anchor.
 - 5. Jamb Anchors: Provide number and spacing of anchors as follows:
 - a. Stud-Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
 - a) Three anchors per jamb up to 60 inches high.
 - b) Four anchors per jamb from 60 to 90 inches high.
 - c) Five anchors per jamb from 90 to 96 inches high.
 - d) Five anchors per jamb plus one additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
 - 6. Head Anchors: Two anchors per head for frames more than 42 inches wide and mounted in metal-stud partitions.
 - 7. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
 - b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.
- D. Fabricate concealed stiffeners and edge channels from either cold- or hot-rolled steel sheet.
- E. Hardware Preparation: Factory prepare hollow-metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.
 - 1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
 - 2. Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.
- F. Stops and Moldings: Provide stops and moldings around glazed lites and louvers where indicated. Form corners of stops and moldings with mitered hairline joints.
 - 1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow-metal work.
 - 2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.

3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.
4. Provide loose stops and moldings on inside of hollow-metal work.
5. Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.

2.08 STEEL FINISHES

- A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
 1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

2.09 ACCESSORIES

- A. Metal Security Louvers: Provide louvers for door, where indicated, which comply with SDI 111C.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Anemostat; a Mestek company; PLSL.
 - b. Air Louvers Inc.; 1500-ASG.
 2. Blade Type: Vision-proof, inverted Y.
 3. Metal and Finish: Hot-dip galvanized steel, Frame & Grille: minimum 0.096 inch thick (12 gauge), Louver Blades: minimum 0.040 inch thick (18 gauge), factory primed for paint finish.
- B. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.
- C. Grout Guards: Formed from same material as frames, not less than 0.016 inch thick.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.
- C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
- B. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.03 INSTALLATION

- A. General: Install hollow-metal work plumb, rigid, properly aligned, and securely fastened in place. Comply with Drawings and manufacturer's written instructions.

- B. Hollow-Metal Frames: Install hollow-metal frames of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.
- a. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
 - b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
 - c. Install frames with removable stops located on secure side of opening.
 - d. Remove temporary braces necessary for installation only after frames have been properly set and secured.
 - e. Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
- C. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with post-installed expansion anchors.
1. Floor anchors may be set with power-actuated fasteners instead of post-installed expansion anchors if so indicated.
 2. Metal-Stud Partitions: Solidly pack mineral-fiber insulation inside frames.
 3. Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
 - a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.
- D. Hollow-Metal Doors: Fit hollow-metal doors accurately in frames, within clearances specified below. Shim as necessary.
1. Non-Fire-Rated Steel Doors:
 - a. Between Door and Frame Jambs and Head: 1/8 inch plus or minus 1/32 inch.
 - b. Between Edges of Pairs of Doors: 1/8 inch to 1/4 inch plus or minus 1/32 inch.
 - c. At Bottom of Door: 5/8 inch plus or minus 1/32 inch.
 - d. Between Door Face and Stop: 1/16 inch to 1/8 inch plus or minus 1/32 inch.
- E. Glazing: Comply with installation requirements in Section 08 80 00 "Glazing" and with hollow-metal manufacturer's written instructions.
1. Secure stops with countersunk tamperproof flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c. and not more than 2 inches o.c. from each corner.

3.04 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.
- B. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
- C. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

END OF SECTION

SECTION 08 71 00

FINISH HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: "Finish Hardware" includes items known commercially as builders hardware which are required for swing, sliding and folding doors, except special types of unique and non- matching hardware specified in the same section as the door and door frame. Types of items in this section include (but are not necessarily limited to):
1. Hinges
 2. Lock Cylinders and Keys
 3. Lock and latch sets
 4. Bolts
 5. Exit devices (panic hardware)
 6. Push/pull units
 7. Closers
 8. Overhead holders
 9. Miscellaneous door control devices
 10. Door trim units
 11. Protection plates
 12. Thresholds
 13. Weather-stripping
- B. "Hardware groups" have been assigned to the various doors required for this Work, as described in the Door Schedule on the Drawings; the hardware groups are described in detail on the drawings.
- C. Related Requirements:
1. Section 01 33 00 – Submittal Procedures
 2. Section 08 11 13 – Hollow Metal Doors and Frames
 3. Section 32 31 13 – Chain Link Fencing
 4. Section 32 36 00 – Landscape Decorative Metal

1.02 QUALITY ASSURANCE:

- A. Manufacturer: Obtain each kind of hardware (latch and locksets, hinges, closers, etc) from only one manufacturer.
- B. Supplier: A recognized builders hardware supplier who has been furnishing hardware in the project's vicinity for a period of not less than 2 years, and who is, or employs an experienced hardware consultant who is available, at reasonable times during the course of the work, for consultation about project's hardware requirements, to District, Architect and Contractor.
- C. Fire-rated Openings: Provide hardware for fire-rated openings in compliance with UL10B. Provide only hardware which has been tested and listed by UL for types and sizes of doors required and complies with requirements for door and door frame labels. In addition, manual locks shall comply with California State Standards (CSS) 12-33-2 and panic hardware shall comply with CSS 12-33-3.
- D. Where emergency exit devices are required on fire-rated doors, provide supplementary marking on doors UL labels indicating "Fire Exit Hardware."

- E. Group E lockable doors from the inside: Doors to classrooms and rooms with an occupancy of five or more persons shall be equipped with locks that are lockable from inside the space per 2019 CBC Section 1010.1.11. In addition, the locks shall conform to the specifications and requirements found in 2019 CBC Section 1010.1.9.
- F. Accessibility Requirements: For door hardware on doors required to be accessible, comply with applicable provisions in CCR Title 24, Part 2, California Building Code – Accessibility Standards as enforced by DSA.
1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 pounds.
 2. Hand-activated hardware such as lever locksets, panic bars, and pull handles shall be mounted between 34” to 44” above finish floor or ground.
 3. Comply with the following maximum opening-force requirements:
 - a. Interior, Non-Fire-Rated Hinged Doors: 5 pounds applied perpendicular to door.
 - b. Exterior, Non-Fire-Rated Hinged Doors: 5 pounds applied perpendicular to door.
 4. Thresholds: The floor or landing shall not be more than ½ inch lower than the threshold of the doorway. Change in level between ¼ inch and ½ inch shall be beveled with a slope no greater than one unit vertical in two units horizontal (50 percent slope).
 5. Adjust door closers sweep periods (Delayed Action Feature) so that, from an open position of 90 degrees, the time required to move the door to a position of 12 degrees from the latch is 5 seconds minimum, measured to the leading edge of the door.
- G. Hardware Coordination Meeting: During the course of the work but prior to ordering; contractor shall hold a meeting to review specific door hardware. This meeting shall review the hardware and key schedule along with specific information concerning location and function of each lockset. The meeting shall include the Architect, District Representative, District Locksmiths, General Contractor, Hardware Sub-contractor, and the manufacturer’s representative.

1.03 SUBMITTALS:

- A. Product Data: Submit manufacturer’s technical information for each item of hardware. Include whatever information may be necessary to show compliance with requirements, and include instructions for installation and for maintenance of operating parts and finish.
- B. Hardware Schedule: Submit final hardware schedule confirming compliance as indicated herein. Hardware schedules are intended for coordination of work. Include the following:
1. Name and manufacturer of each item.
 2. Fastenings and other pertinent information
 3. Location of hardware set cross-referenced to indications on Drawings both on floor plans and in door and frame schedule.
 4. Explanation of all abbreviations, symbols, codes, etc. contained in schedule.
 5. Mounting locations for hardware.
 6. Door and frame sizes and materials.
 7. Keying information.

1.04 PRODUCT HANDLING:

- A. Packaging:
1. Furnish all finish hardware with each unit clearly marked or numbered in accordance with the Hardware Schedule.
 2. Pack each item complete with all necessary pieces and fastener.
 3. Properly wrap and cushion each item to prevent scratches during delivery and storage.
- B. Delivery:

1. Deliver all finish hardware to the installers in a timely manner to ensure orderly progress of the total work.

PART 2 - PRODUCTS

2.01 FASTENINGS:

A. General:

1. Furnish all finish hardware with all necessary screws, bolts, and other fasteners of suitable size and type to anchor the hardware in position for long life under hard use.
2. Furnish fastenings where necessary with expansion shields, toggle bolts, sex bolts, and other anchors approved by the Architect, according to the material to which the hardware is to be applied and the recommendations of the hardware manufacturer.
3. Provide the products of the manufacturers listed, without substitutions, unless approved in advance, in writing, by Architect.

B. Design:

1. All fastenings shall harmonize with the hardware as to material and finish.

2.02 KEYING:

- #### A. Construction Keying:
- Provide a method independent of the final keying system for securing the building during construction. Contractor must supply Schlage construction cylinders.

B. Final Keying System:

1. Schlage "Primus" System, Security Level Three, Type EP keyways using 20-700 controlled access cylinders as determined by District. Provide Interchangeable Cores (IC) at all panic devices and where called for in the Hardware Schedule. All cylinders/IC cores and Bitting Schedule shall be provided to District by Hardware Supplier at the time of delivery of the locks. Cylinders/IC Cores shall be Master Keyed by District's Hardware Department, using Schlage Primus System. After Keying all Cylinders/IC Cores shall be issued back to the General Contractor for installation. This requires a coordination meeting with the GC, Hardware Supplier, Schlage Representative, District Locksmith, and Architect, to be scheduled by the GC within 3 weeks of the Notice to Proceed.
2. Key Blanks: Standard 6 pin bow key blank; tag to identify
 - a. Supply 4 cut change keys for each different change key code.
 - b. Supply 6 cut master keys for each different master key set.
 - c. Supply 20 Emergency Keys
 - d. Supply 500 EP Primus Blanks; one side embossed.
 - e. Supply 100% additional Bitting Codes.

2.03 FINISH:

- #### A.
- All finishes to be satin chromium plated, US 26 D, ANSI 626 unless otherwise indicated.

2.04 HARDWARE:

A. Locks/Locksets (All knobs are lever-type: Rhodes (Schlage), Newport (Corbin Russwin.)

1. Ornamental/Chain Link Gates: Panic, Corbin Russwin, ED8200 x P857 (Nightlatch function, Wing Pull P8) x M54 (sex nuts & bolts) with Schlage 20-757(IC) Rim Cylinder. Panic Device and Trims to receive BHMA 689 Silver Painted Finish.
2. Student/Public Toilets, ND95PD, Rhodes. Provide Schlage 20-765 Primus Cylinder.
3. Roll-up Door Cylinder. Provide Schlage 20-765 Primus Cylinder.

B. Hinges

1. Heavy duty hinges:

- a. HAGER, BB1199 Stainless, 4 1/2 x 4 1/2, Heavy Weight, High Frequency, Five- knuckle, four bearing, NRP, full-mortise butts, 1 1/2 pair.
 - b. HAGER, BB1199 Stainless, 4 1/2 x 4 1/2, Heavy Weight, High Frequency, Five- knuckle, NRP, four bearing, full-mortise butts, 2 pair.
 - c. HAGER; BB1199 Stainless, 4 1/2 x 4 1/2, Heavy Weight, High Frequency, Five-knuckle, NRP, four bearing, full-mortise butts, 3 pair. (Double Doors)
2. Self-closing Hinges:
- a. For gates up to 330 lbs and 5-feet wide: Heavy-duty self-closing hinge with hydraulic damping, ADA compliant (requiring maximum 5 lbs of operating force per CBC 11B-309.4); Locinox Mammoth Heavy Duty "Mammoth180" or accepted equal.
 - b. For gates up to 440 lbs and 6 and 1/2 -feet wide: Heavy-duty self-closing hinge with hydraulic damping, ADA compliant (requiring maximum 5 lbs of operating force per CBC 11B-309.4); Locinox Mammoth Ultra Heavy Duty "Mammoth-HD" or accepted equal.
- C. Closers
1. NORTON, PR7500DA (Barrier Free, 90 degree opening with delayed closing, Painted Aluminum)
 2. NORTON, PR7500DA (Barrier Free, 180 degree opening with delayed closing, Painted Aluminum)
- D. Stops
1. Trimco, #1270CVSV – Stop, Wall
 2. Trimco, #1209 – Stop, Floor (Interior)
 3. Trimco, #1209HA – Stop, Walk (Exterior)
 4. Trimco, #1260W – Wall Stop & Holder, Strike (Not for Fire Rated Applications)
- E. Thresholds
1. Threshold, Pemko; 158 A (1/2" offset)
 2. Threshold, Pemko; 272 A (6")
 3. Threshold, Pemko; 2005-T (1/2" latching panic saddle)
 4. Threshold (Storefront), Pemko; 2286A (Aluminum Floor Plate) and 195A (Aluminum Floor Plate Transition)
- F. Miscellaneous
1. Lock Guard, BLP 107-630 3-1/4"x7" Latch Protection
 2. Kick Plate, Trimco; KO050, 10", .050", Aluminum
 3. Weather-strip, Pemko, 319 CR
 4. Smoke Seal, Pemko, HSS2000xS88
 5. Shoe, Pemko; 217AV (sweep)
 6. Astragal, Pemko 305CN

PART 3 - EXECUTION:

3.01 DELIVERIES:

- A. Stockpile all items sufficiently in advance to ensure their availability and make all necessary deliveries in a timely manner to ensure orderly progress of the total work.

3.02 INSTALLATION:

- A. Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute, except as specifically indicated or required to comply with governing regulations, and except as may be otherwise directed by Architect. Hand-activated hardware such as lever locksets, panic bars, and push-pull handles shall be 34" minimum and 44" maximum above finish floor or ground.

- B. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Wherever cutting and fittings required to install hardware onto or into surfaces which are later to be painted or finished in another way, coordinate removal, storage and reinstallation or application of surface protections with finishing work specified in the division 9 sections. Do not install surface-mounted items until finishes have been completed on the substrate
- C. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation. **Provide steel stud backing in walls as necessary to provide proper anchorage for wall mounted hardware.**
- D. Drill and countersink units, which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

3.03 ADJUST AND CLEAN:

- A. Adjust and check each operating item of hardware and each door, to ensure proper operation of function of every unit. Replace units, which cannot be adjusted to operate freely and smoothly as intended for the application made.
- B. Instruct District's Personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware.
- C. Continued Maintenance Service: Approximately six months after the acceptance of hardware in each area, the Installer, accompanied by the representative of the latch and lock manufacturer, shall return to the project and re-adjust every item of hardware to restore proper function of doors and hardware. Consult with and instruct District's personnel in recommended additions to the maintenance procedures. Replace hardware items which have deteriorated or failed due to faulty design, materials or installation of hardware units. Prepare a written report of current and predictable problems (of substantial nature) in the performance of the hardware, and deliver report to District with a copy to the Architect.

END OF SECTION

SECTION 09 91 15

EXTERIOR SITE PAINTING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Painting and painter's finish on site and landscape improvements, except prefinished items and unless otherwise noted, as required to complete finishing of the Work. The Work includes the following specific items:
 - a. Dugouts
 - b. Backstop Baseboards
- B. Items Not Included in This Section:
 - 1. Factory-prefinished items as specified in various Sections.
 - 2. Painting specified elsewhere and included in respective Sections, including but not necessarily limited to shop priming.
- C. Related Requirements:
 - 1. Section 09 96 23 - Graffiti-Resistant Coatings

1.02 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action and Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.
- B. Coordination: Perform painting work in proper sequence with work of other trades so as to avoid damage to finished work.

1.03 ACTION SUBMITTALS

- A. Product Data: A complete list of materials proposed for use, together with manufacturer's technical information, including paint label analysis and application instructions.
- B. Color Samples:
 - 1. Appropriately label and identify each sample, including location and application. Include name, color number, and gloss units.
 - 2. Wood: Prepare on type and quality of wood specified, 12 inches square or long, as applicable.
 - 3. Other Surfaces: Prepare on hardboard, 8 inches square.
 - 4. Each sample shall have stepped finish, clearly showing each coat and build-up of specified finish. Submit separate samples for each required gloss level.
 - 5. Resubmit samples as requested until required sheen, color, and texture are achieved.
 - 6. See also requirements for field samples below.

1.04 INFORMATIONAL SUBMITTALS

- A. Statement of applicator qualifications.

1.05 CLOSEOUT SUBMITTALS

- A. Extra stock as specified.

- B. Specified warranty.

1.06 QUALITY ASSURANCE

- A. Unsuitability of Specified Products: Claims concerning unsuitability of any material specified (or inability satisfactorily to produce the Work) will not be entertained, unless such claim is made, in writing, to Owner's Representative before beginning of application.
- B. Single-Source Responsibility:
 - 1. To the maximum extent practicable, select a single manufacturer to provide all materials required by this Section, using additional manufacturers to provide systems not offered by the selected principal manufacturer.
 - 2. For each individual system:
 - a. Provide primer and other undercoat paint produced by same manufacturer as finish coat.
 - b. Use thinner within manufacturer's recommended limits.
- C. Applicator Qualifications:
 - 1. Not less than 5 years of documented experience in painting work similar in scope to work of this Project.
 - 2. Maintain a crew of painters who are fully qualified to satisfy requirements of this Section.
- D. Field Samples:
 - 1. Request review, by the Owner's Representative, of first finished item of each finish type or color scheme required for color, texture, and workmanship.
 - 2. For walls, finish a panel 8 feet square.
 - 3. Modify selected colors, if requested by Owner's Representative, to achieve desired effect.
 - 4. Use first acceptable surface or item as the Project standard for each color scheme.
- E. Primers:
 - 1. Provide finish coats that are compatible with prime paints used.
 - 2. Review other Sections of these Specifications in which prime paints are to be provided in order to ensure compatibility of total coatings system for various substrates.
 - 3. Upon request, furnish information to other Sections regarding characteristics of finish materials proposed for use.
 - 4. Provide barrier coats over incompatible primers, or remove and re-prime as required.
 - 5. Notify Owner's Representative, in writing, of any anticipated problems arising from using specified coating systems with substrates primed by other Sections.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original, new, unopened packages and containers bearing the manufacturer's name and label describing contents including the following information:
 - 1. Name or title of material.
 - 2. Manufacturer's stock number and date of manufacture.
 - 3. Contents by volume for major pigment and vehicle constituents.
 - 4. Thinning instructions.
 - 5. Application instructions.
 - 6. Color name and number.
- B. Store materials in tightly covered containers. Maintain containers in a clean condition, free of foreign materials and residue.
- C. Store materials at ambient temperature of between 45 degrees F minimum and 90 degrees F maximum, in a well-ventilated area.

- D. Ensure that storage area is neat and orderly.
- E. Take precautionary measures to prevent fire and health hazards.

1.08 FIELD CONDITIONS

- A. Ambient Conditions:
 - 1. Comply with manufacturer's recommendations as to environmental conditions under which coatings and coating systems can be stored and applied.
 - 2. Do not apply finish in areas where dust is being generated.
- B. Cover or otherwise protect in progress and finished work of other trades, and surfaces not being painted concurrently or not to be painted.

1.09 WARRANTY

- A. Color and Life of Film:
 - 1. At the end of 1 year, colors of surfaces shall have remained free from serious fading. Variations (if any) shall be uniform.
 - 2. Materials shall have their original adherence at end of 1 year. There shall be no evidence of blisters, running, peeling, scaling, chalking, streaks, or stains at end of this period.

1.10 EXTRA MATERIALS

- A. At completion of the Work, deliver to Owner extra stock of paint of each color used in each coating material used.
- B. Containers shall be full, tightly sealed, and clearly marked.
- C. Provide the following quantities:
 - 1. Field Colors: One 5-gallon container.
 - 2. Accent Colors: One 1-gallon container.

PART 2 - PRODUCTS

2.01 MANUFACTURERS AND PRODUCTS

- A. Products are specified under "Paint Systems" in Part 3 below and are manufactured by Kelly-Moore Paints, unless otherwise indicated. Equivalent products manufactured by PPG, Benjamin Moore, Sherwin-Williams, or Dunn-Edwards are acceptable.
- B. Materials selected for coating systems for each type surface shall be the product of a single manufacturer or shall be acceptable to manufacturer of finish coating for system.
- C. If more than one quality level of product type is marketed, use material of highest quality.

2.02 COLORS

- A. Colors shall be as scheduled on the Drawings. Scheduled colors may have manufacturer identifications other than the acceptable manufacturers listed above. The Drawing listing is solely for the purpose of conveying color information and does not imply manufacturer's approval or waiver of the requirement that all coatings be from the same manufacturer, unless a specific system is not available from the primary manufacturer.

- B. Submit samples of selected colors as specified in Part 1 above.
- C. Colors of paints, including shades of stain, shall match color chips on schedule.

2.03 MIXING AND TINTING

- A. Deliver paints and stains ready mixed to jobsite.
- B. Accomplish job mixing and job tinting only if required for adjustment to finish applied to field test areas to achieve color acceptable to Owner's Representative.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine surfaces scheduled to receive paint and finishes for conditions that will adversely affect execution, permanence, or quality of work and that cannot be put into acceptable condition through preparatory work as included in Article 3.02, "Preparation."
- B. Do not proceed with surface preparation or coating application until conditions are suitable.

3.02 PREPARATION

- A. General:
 - 1. Verify that surfaces to be painted are dry, clean, smooth, and free from deleterious materials.
 - 2. Protect hardware, exposed metals, and other surfaces that are not to be painted by masking, removal, or other means to ensure a neat job.
- B. Wood - General:
 - 1. Cleaning and Sanding:
 - a. Remove handling marks and effects of exposure to moisture with a thorough, final sanding over all exposed surfaces, using 150-grit or finer sandpaper.
 - b. Clean and vacuum before applying sealer or finish.
 - 2. Wood to Receive Opaque Finish: Fill nail holes, cracks, open joints, and other defects with filler after priming coat has dried. Color shall match finish color.
 - 3. Wood to Receive Transparent Finish:
 - a. Remove any material that would adversely affect penetration or appearance of finish.
 - b. Do not seal wood surfaces to receive transparent finish.
- C. Wood – New Exterior, Opaque Finish:
 - 1. Surfaces shall be dry and free of grease and splatters.
 - 2. Rough surfaces shall be sanded smooth.
 - 3. Fill nail holes, cracks, open joints, and other defects with filler after priming coat has dried. Exposed nail heads shall be spot primed.
 - 4. Avoid painting surfaces while exposed directly to hot sun.
 - 5. Smooth surfaces shall be sanded thoroughly to allow proper penetration and adhesion. Areas exhibiting tannic acid staining shall receive two coats of primer waiting 24 hours between coats. Sand and prime as soon as possible after installation to avoid UV degradation of unpainted wood surface.
 - 6. Mildew, if present, shall be removed by scrubbing with a commercial mildew wash in accordance with manufacturer's directions.
- D. Wood - Existing Exterior, Opaque Finish:

1. Remove all blistered, peeling and scaling paint to a sound substrate by scraping, sanding, and wire brushing. Spot prime bare wood and exposed nail heads before applying overall coat of primer.
 2. Surfaces that exhibit moderate to heavy chalk deposits shall be thoroughly cleaned to sound substrate by wire brushing, sanding, or power washing.
 3. Loose and split sealants shall be removed and replaced.
 4. Glossy surfaces shall be dulled by sanding. Crystalline deposits shall be removed by flushing with water from a hose.
 5. Mildew, if present, shall be removed by scrubbing with a commercial mildew wash in accordance with manufacturer's directions.
- E. Wood – New and Existing Exterior, Transparent Finish:
1. Surfaces shall be dry and free of grease and splatters.
 2. Avoid coating surfaces while exposed directly to hot sun.
 3. Mildew, if present, shall be removed by scrubbing with a commercial mildew wash in accordance with manufacturer's directions.
 4. Comply with additional requirements of the coating manufacturer.
- F. Metals:
1. Remove mill scale, rust, and corrosion.
 2. Clean oils, grease, and dust from surfaces.
 3. Touch up chipped or abraded areas in shop coatings, using appropriate primer.
 4. Soluble Salts: Removal of soluble salts from bare metal and galvanized metal surfaces, both interior and exterior, is required prior to application of primer coats to preclude pre-mature coating failure and accelerated corrosion.
 - a. Removal shall be in accordance with SSPC-Guide 15, "Field Methods for Retrieval and Analysis of Soluble Salts on Steel and Other Nonporous Substrates."
 - b. Abrasive blasting, where specified as a required surface preparation procedure, shall be performed after removal of soluble salts. Abrasive blasting is not an acceptable procedure for removal of soluble salts.
 5. Previously Painted Metal: Prepare in accordance with recommendations of coating manufacturer based on condition of surfaces and the following:
 - a. Remove loose paint, dirt, and chalk with scraper and strong detergent solution.
 - b. Abrade shiny surfaces, such as baked enamel.
 - c. Clean surfaces of dust from sanding and other foreign matter that could adversely affect adhesion or performance of coating system. Remove sanding dust with a clean, wet rag.
 - d. Surfaces shall be clean, dry, smooth, and even.
- G. Concrete:
1. Fill cracks and irregularities with Portland cement grout or patching mortar in order to provide uniform surface texture.
 2. Surfaces shall not be painted until they have completely cured and have a stabilized moisture content but in no case less than 60 days from completion of surface.
- H. Cement Plaster:
1. Fill cracks and irregularities with Portland cement grout or patching mortar in order to provide uniform surface texture.
 2. Surfaces shall not be painted until they have completely cured and have a stabilized moisture content but in no case less than 60 days from completion of surface.
- I. Concrete Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions
- J. Surfaces that cannot be prepared or painted as specified shall be immediately brought to the attention of the Owner's Representative, in writing.
1. Starting of work without such notification will be considered acceptance by the Contractor of surfaces involved.

2. Replace unsatisfactory work caused by improper or defective surfaces, as directed by Owner's Representative.

3.03 FACTORY FINISHING AND PRIMING

- A. Pertinent Work and Requirements Specified Elsewhere: Review all Sections for products that are to be factory finished or factory (shop) primed.
- B. Touch-up: Touch up abrasions in prime coat immediately after products arrive on jobsite and as required prior to application of finish coats.

3.04 APPLICATION

- A. Do not apply initial coating until moisture content of surface is within limitations recommended by paint manufacturer.
- B. Application:
 1. Apply paint with suitable brushes, rollers, or spraying equipment.
 2. Guardrails and other exposed metal requiring field finish painting shall be sprayed to the fullest extent conditions will permit. If brush or roller application is used, surface finish shall be subject to review by the Owner's Representative for complying with the appearance requirements specified herein.
 3. Apply coatings in accordance with manufacturer's recommendations.
 4. Rate of application shall be within limits recommended by paint manufacturer for surface involved.
- C. Spray-Gun Application - Standard Coatings:
 1. Spray-apply standard paints only with airless sprayer.
 2. Apply in fine, even spray, without addition of thinner, using nozzle pattern suitable to surface being painted.
 3. When necessary, follow by brushing to ensure uniform coverage and to eliminate wrinkling, blistering, and air holes.
 4. If spraying becomes detrimental to equipment or objectionable to personnel, brush painting will be required.
- D. Comply with recommendation of product manufacturer for drying time between succeeding coats.
- E. Finish coats shall be smooth and free from brush marks, streaks, laps or pileup of paints, and skipped or missed areas.
- F. Leave all parts of moldings and trim clean and true to details with no undue amount of paint in corners and depressions.
- G. Make edges of paint adjoining other materials or colors clean and sharp, with no overlapping.
- H. Refinish whole area where portion of finish is not acceptable.

3.05 CLEANING

- A. Touch up and restore finish where damaged.
- B. Remove spilled, splashed, or spattered paint from all surfaces. Do not mar surface finish of item being cleaned.
- C. Leave storage space clean and in condition required for equivalent spaces in Project.

3.06 PAINT SYSTEMS

A. General:

1. This Specification shall serve as guide and is meant to establish procedure and quality. Confer with the Owner's Representative to determine exact finish desired.
2. Number of coats scheduled is minimum. Additional coats shall be applied at no additional cost as required to hide base material completely, produce uniform color, and provide required and satisfactory finish.

B. Acceptance of Final Colors: Final coat of paint shall not be applied until colors have been accepted by the Owner's Representative.

C. Gloss and Sheen Ratings: It is recognized that manufacturer's use various identifiers for the sheen of their paints. The sheen rating of applied paint, therefore, shall be identified as a Gloss Level and generally fall within the following limits established by the Master Painters Institute, Inc. (MPI) Standards and ASTM D523. Not all of the Gloss Levels are necessarily scheduled or used on this Project.

1. Gloss Level 1: Matte or Flat; not more than 5 units at 60 degrees and 10 units at 85 degrees.
2. Gloss Level 2: Velvet or Low Sheen; not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees.
3. Gloss Level 3: Eggshell; 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees.
4. Gloss Level 4: Satin; 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees.
5. Gloss Level 5: Semi-gloss; 35 to 70 units at 60 degrees.
6. Gloss Level 6: Gloss; 70 to 85 units at 60 degrees.

D. Clarification of System Terminology:

1. Exterior paint Systems are specified and identified herein by initial letters "EXT."
2. Initial numbers for each System identify the substrate to be coated.
3. Letter following substrate numbers identify the general finish coat chemistry summarized as follows:

CODE	DESCRIPTION
A	Standard acrylic
B	Standard alkyd
C	Semi-transparent stain
D	Semi-solid stain
H	High performance polyurethane
M	Premium performance acrylic polymer
T	Fluoropolymer

4. Hyphenated suffix identifies the topcoat gloss levels.

E. Exterior Painting Systems:

EXT 4.2A-1

Latex on Concrete Unit Masonry - Gloss Level 1

1 coat	"Bloxfil" 4000	Heavy-duty Block Filler
2 coats	2200-XXXX	100% Acrylic Flat

EXT 5.1A-5

Acrylic over Waterborne Primer on Ferrous Metal - Gloss Level 5

1 coat	4020-1000	Metal Primer (If Not Shop Primed)
2 coats	4206-XXXX	Acrylic Semi-gloss

EXT 5.3-5

Acrylic over Waterborne Primer on Galvanized Metal - Gloss Level 5

Pretreatment (SSPC SP-1)	Devprep 88	Heavy-duty cleaner
1 coat	4020-1000	Primer
2 coats	2406-XXXX	100% Acrylic Semi-gloss

EXT 6.3A-4

Acrylic on Dressed Lumber - Gloss Level 3

1 coat

2000-1000

100% Acrylic Primer

2 coats

2402 XXXXV

100% Acrylic Satin Enamel

END OF SECTION

SECTION 09 96 23

GRAFFITI-RESISTANT COATINGS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Liquid-applied sacrificial surface sealer for all exterior masonry and concrete wall surfaces that will prevent penetration of staining mediums and allow easy removal and reapplication.
- B. Related Requirements:
 - 1. Section 32 32 15 – Landscape Concrete.
 - 2. Section 32 32 20 – Landscape Concrete Masonry.

1.02 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action and Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.

1.03 ACTION SUBMITTALS

- A. Product Data: Manufacturer's specifications, installation instructions, and general recommendations for specified coating materials. Include instructions and recommendations for cleaning and preparation of concrete surfaces, coating and recoating application techniques, equipment to be used, coverage rates, accessory materials, and special removal procedures.
- B. Samples: 12-inch-square of each substrate to receive graffiti-resistant coating, with coating applied to half of each sample.

1.04 INFORMATIONAL SUBMITTALS

- A. Statement of applicator qualifications.
- B. Letter documenting work has been applied in compliance with specifications and manufacturer's written instructions and that specified field testing has been satisfactory.

1.05 CLOSEOUT SUBMITTALS

- A. Extended warranty.
- B. Maintenance materials.

1.06 QUALITY ASSURANCE

- A. Applicator Qualifications: Approved in writing by the manufacturer with documented experience in application of similar graffiti-resistant coatings.
- B. Mockup:
 - 1. Treat and evaluate a minimum eight square foot area of completed wall at the Project site for product adhesion, compatibility, and appearance.
 - 2. Apply and remove graffiti to a portion of the mock-up to the satisfaction of the Owner's Representative.

3. Application shall not continue unless mockup is acceptable to Owner's Representative.

C. Do not apply specified coatings when surfaces or ambient air temperature is below 45-degree F, over 90 degrees F, or expected to drop below freezing during the 24-hour period following application.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Store materials at site in protected location, and away from flame, excessive heat, at temperatures above 40 degrees F.

1.08 MAINTENANCE

A. At completion of the Work, deliver to Owner specified cleaning and application solution sufficient to clean and recoat a minimum of 500 square feet of coated wall surface.

B. Stock shall be in factory sealed and clearly labeled containers.

C. Stock shall be delivered and stored as directed by the Owner.

PART 2 - PRODUCTS

2.01 PERFORMANCE CRITERIA

A. The coating shall not darken, stain, or discolor substrate surfaces.

B. The coating shall be non-yellowing.

2.02 MATERIALS

A. Graffiti-Resistant Coating System: "Defacer Eraser" SC-1 by Prosoco, or equal meeting governing VOC requirements.

B. Application Equipment: Medium-to-large-capacity airless sprayer and hoses or other equipment as recommended by the coating manufacturer.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are dry, clean, and free of dust, dirt, grime, oils, alkali or acid residues, and other contaminants or compounds unacceptable to the graffiti-resistant coating manufacturer.

3.02 PREPARATION

A. Clean and prepare substrates in accordance with graffiti-resistant coating manufacturer's instructions.

B. Test for moisture content in accordance with manufacturer's instructions to ensure that surface is sufficiently dry.

C. Protect adjacent surfaces not to receive coating from spillage or blow-over.

D. Cover adjoining and nearby surfaces of metal and glass as required.

3.03 APPLICATION

- A. Apply graffiti-resistant coating following manufacturer's recommendations for number of coats and their application.
- B. Avoid runs or applying coating too heavily as this will impair transparency of cured material. Excessive coating will turn milky when it gets wet after curing.
- C. Runs or sags on masonry surface shall be immediately brushed out using a clean, soft brush.
- D. Clean spillage from horizontal surfaces immediately after spillage.

END OF SECTION

SECTION 26 05 10

GENERAL ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The work of this Section consists of providing all required labor, supervision, materials and equipment to satisfactorily complete all electrical installations that are shown on the Drawings, included in these specifications, or otherwise needed for a complete and fully operating facility.
- B. Furnish and install all required in-place equipment, conduits, conductors, cables and any miscellaneous materials for the satisfactory interconnection and operation of all associated electrical systems.

1.02 RELATED WORK

- A. This Section provides the basic Electrical Requirements which supplement the General Requirements of Division 1 and apply to all Sections of Division 26.

1.03 SUBMITTALS

- A. As specified in Division 1. Submit to the Architect shop drawings, manufacturer's data and certificates for equipment, materials and finish, and pertinent details for each system specified. Information to be submitted includes manufacturer's descriptive literature of cataloged products, equipment, drawings, diagrams, performance and characteristic curves as applicable, test data and catalog cuts. Obtain written approval before procurement, fabrication, or delivery of the items to the job site. Partial submittals are not acceptable and will be returned without review. Furnish manufacturer's name, trade name, catalog model or number, nameplate data, size, layout dimensions, capacity, project specification and paragraph reference, applicable Federal, Industry and Technical Society Publication References, and years of satisfactory service of each item required to establish contact compliance. Photographs of existing installations and data submitted in lieu of catalog data are not acceptable and will be returned without approval.
- B. Organize submittals for equipment and items related to each specification section together as a package.
- C. Proposed substitutions of products will not be reviewed or approved prior to awarding of the Contract.
- D. Substitutions shall be proven to the Architect or Engineer to be equal or superior to the specified product. Architect's decision is final. The Contractor shall pay all costs incurred by the Architect and Engineer in reviewing and processing any proposed substitutions whether or not a proposed substitution is accepted.
- E. If a proposed substitution is rejected, the contractor shall furnish the specified product at no increase in contract price.
- F. If a proposed substitution is accepted, the contractor shall be completely responsible for all dimensional changes, electrical changes, or changes to other work which is a result of the substitution. The accepted substitution shall be made at no additional cost to the owner or design consultants.

- G. If a proposed substitution is accepted after bid, the contractor should be required to show the credit due to the owner.

1.04 QUALITY ASSURANCE

- A. Codes: All electrical equipment and materials, including installation and testing, shall conform to the latest editions following applicable codes:
 - 1. California Electrical Code (CEC).
 - 2. Occupational Safety and Health Act (OSHA) standards.
 - 3. All applicable local codes, rules and regulations.
 - 4. Electrical Contractor shall possess a C-10 license and all other licenses as may be required. Licenses shall be in effect at start of this contract and be maintained throughout the duration of this contract.
- B. Variances: In instances where two or more codes are at variance, the most restrictive requirement shall apply.
- C. Standards: Equipment shall conform to applicable standards of American National Standards Institute (ANSI), Electronics Industries Association (EIA), Institute of Electrical and Electronics Engineers (IEEE), and National Electrical Manufacturers Association (NEMA).
- D. Underwriter Laboratories (UL) listing is required for all equipment and materials where such listing is offered by the Underwriters Laboratories. Provide service entrance labels for all equipment required by the NEC to have such labels.
- E. The electrical contractor shall guarantee all work and materials installed under this contract for a period of one (1) year from date of acceptance by owner.
- F. All work and materials covered by this specification shall be subject to inspection at any and all times by representatives of the owner. Work shall not be closed in or covered before inspection and approval by the owner or his representative. Any material found not conforming with these specifications shall, within 3 days after being notified by the owner, be removed from premises; if said material has been installed, entire expense of removing and replacing same, including any cutting and patching that may be necessary, shall be borne by the contractor.

1.05 DRAWINGS

- A. Drawings: The electrical Drawings shall govern the general layout of the completed construction.
 - 1. Locations of equipment, panels, pullboxes, conduits, stub-ups, ground connections are approximate unless dimensioned; provide and verify locations with the Architect prior to installation.
 - 2. Review the Drawings and Specification Divisions of other trades and perform the electrical work that will be required for those installations.
 - 3. Should there be a need to deviate from the Electrical Drawings and Specifications, submit written details and reasons for all changes to the Architect for approval.
 - 4. The general arrangement and location of existing conduits, piping, apparatus, etc., is approximate. The drawings and specifications are for the assistance and guidance of the

contractor, exact locations, distances and elevations are governed by actual field conditions. Accuracy of data given herein and on the drawings is not guaranteed. Minor changes may be necessary to accommodate work. The contractor is responsible for verifying existing conditions. Should it be necessary to deviate from the design due to interference with existing conditions or work in progress, claims for additional compensation shall be limited to those for work required by unforeseen conditions as determined by the Architect.

5. All drawings and divisions of these specifications shall be considered as whole. This contractor shall report any apparent discrepancies to the Architect prior to submitting bids.
6. The contractor shall be held responsible to have examined the site and compared it with the specifications and plans and to have satisfied himself as to the conditions under which the work is to be performed. He shall be held responsible for knowledge of all existing conditions whether or not accurately described. No subsequent allowance shall be made for any extra expense due to failure to make such examination.

1.06 CLOSEOUT SUBMITTALS

- A. Manuals: Furnish manuals for equipment where manuals are specified in the equipment specifications or are specified in Division 1.

1.07 COORDINATION

- A. Coordinate the electrical work with the other trades, code authorities, utilities and the Architect.
- B. Provide and install all trenching, backfilling, conduit, pull boxes, splice boxes, etc. for all Utility Company services to the locations indicated on the Drawings. All materials and construction shall be in accordance with the requirements for all the Utility Companies. The contractor shall be responsible for completing the (N) service per PG&E's Greenbook current standards and substructure package. Prior to performing any work, the Electrical Contractor shall coordinate with the various Utility Companies to verify that all such work and materials shown on the Drawings are of sufficient sizes and correctly located to provide services on the site. The contractor shall obtain, provide and coordinate all requirements noted in PG&E's substructure package to successfully complete new service. The Electrical Contractor shall verify with all the Utility Companies that additional contractor furnished and installed work is not required. If additional work, materials, or changes are required by any of the Utility Companies, the Electrical Contractor shall advise the Architect of such changes and no further work shall then be performed until instructed to do so by the Architect.
- C. Utility Company charges shall be paid by the Owner.
- D. Contractor shall pay all inspection and other applicable fees and procure all permits necessary for the completion of this work.
- D. Where connections must be made to existing installations, properly schedule all the required work, including the power shutdown periods.
- E. When two trades join together in an area, make certain that no electrical work is omitted.

1.08 JOB CONDITIONS

- A. Operations: Perform all work in compliance with Division 1
 1. Keep the number and duration of power shutdown periods to a minimum.

2. Show all proposed shutdowns and their expected duration on the construction schedule. Schedule and carry out shutdowns so as to cause the least disruption to operation of the Owner's facilities.
 3. Carry out shutdown only after the schedule has been approved, in writing, by the owner. Submit power interruption schedule 15 days prior to date of interruption.
- B. Construction Power: Unless otherwise noted in Division 1 of these specifications, contractor shall make all arrangements and provide all necessary facilities for temporary construction power from the owner's on site source. Energy costs shall be paid for by the Owner
- C. Storage: Provide adequate storage for all equipment and materials which will become part of the completed facility so that it is protected from weather, dust, water, or construction operations.
- 1.09 DAMAGED PRODUCTS
- A. Notify the Architect in writing in the event that any equipment or material is damaged. Obtain approval from the Architect before making repairs to damaged products.
- 1.10 LOCATIONS
- A. General: Use equipment, materials and wiring methods suitable for the types of locations in which they are located.
- B. Dry Locations: All those indoor areas which do not fall within the definition below for Wet Locations and which are not otherwise designated on the Drawings.
- C. Wet Locations: All locations exposed to the weather, whether under a roof or not, unless otherwise designated on the Drawings.
- 1.11 SAFETY AND INDEMNITY
- A. The Contractor is solely and completely responsible for conditions of the job site including safety of all persons and property during performance of the work. This requirement will apply continually and not be limited to normal working hours. The contractor shall provide and maintain throughout the work site proper safeguards including, but not limited to, enclosures, barriers, warning signs, lights, etc. to prevent accidental injury to people or damage to property.
- B. No act, service, drawing review or construction review by the Owner, the Engineer or their Consultants is intended to include reviews of the adequacy of the Contractors safety measures in or near the construction site.
- C. The Contractor performing work under this Division of the Specifications shall hold harmless, indemnify, and defend the Owner, the Engineer, their consultants, and each of their officers, agents and employees from any and all liability claims, losses, or damage arising out of or alleged to arise from bodily injury, sickness, or death of a person or persons and for all damages arising out of injury to or destruction of property arising directly or indirectly out of or in connection with the performance of the work under this Division of the Specifications, and from the Contractor's negligence in the performance of the work described in the construction contract documents, but not including liability that may be due to the sole negligence of the Owner, the Engineer, their Consultants or their officers, agents and employees.
- D. The project work area does not contain asbestos materials. However, if a work area is encountered that does contain asbestos materials, the contractor is advised to coordinate with the owner and it's asbestos abatement consultant all measures necessary to provide installation of

conduit, and hangers. All asbestos containing materials related work shall conform to the directions given by the owner. Nothing herein shall be construed to create a liability for American Consulting Engineers regarding asbestos abatement measures.

1.12 ACCESS PANELS AND DOORS

- A. The Contractor shall install access panels as required where floors, walls or ceilings must be penetrated for access to electrical, control, fire alarm or other specified electrical devices. The minimum size panel shall be 14" x 14" in usable opening. Where access by a service person is required, minimum usable opening shall be 18" x 24".
- B. All access doors installed lower than 7'-0" above finished floor and exposed to public access shall have keyed locks.
- C. Where specific information or details relating to access panels differ from these specifications, shown on drawings and or details or on other Divisions of work, these requirements shall supersede these specifications.
- D. Approved Manufacturers: Subject to compliance with requirements under Architectural Specifications, Milcor, Karp, Nystrom or Cesco.
 - 1. Milcor Style K (plaster)
 - 2. Milcor Style DW (gypsum board)
 - 3. Milcor Style M (masonry)
 - 4. Milcor Style "Fire Rated" where required.

PART 2 - PRODUCTS

2.01 STANDARD OF QUALITY

- A. Products that are specified by manufacturer, trade name or catalog number establish a standard of quality and do not prohibit the use of equal products of other manufacturers provided they are approved by the Architect prior to installation.
- B. Material and Equipment: Provide materials and equipment that are new and are current products of manufacturers regularly engaged in the production of such products. The standard products shall have been in satisfactory commercial or industrial use for two years prior to bid opening. The two-year period includes use of equipment and materials of similar size under similar circumstances. For uniformity, only one manufacturer will be accepted for each type of product.
- C. Service Support: Submit a certified list of qualified permanent service organizations including their addresses and qualification for support of the equipment. These service organizations shall be convenient to the equipment installation and able to render service to the equipment on a regular and emergency basis during the warranty period of the contract.
- D. Manufacturer's Recommendations: Where installation procedures are required to be in accordance with manufacturer's recommendations, furnish printed copies of the recommendations prior to installation. Installation of the item shall not proceed until recommendations are received. Failure to furnish recommendation shall be cause for rejection of the equipment or material.

2.02 NAMEPLATES

- A. For each piece of electrical equipment, provide a manufacturer's nameplate showing his name, location, the pertinent ratings, the model designation, and shop order number.
- B. Identify each piece of equipment and related controls with a rigid laminated engraved plastic nameplate. Unless otherwise noted, nameplates shall be melamine plastic 0.125 inch thick, white with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core. Minimum size of nameplates shall be 0.5 by 2.5 inches unless otherwise noted. Where not otherwise specified, lettering shall be a minimum of 0.25 inch high normal block style. Engrave nameplates with the inscriptions indicated on the Drawings and, if not so indicated, with the equipment name. Securely fasten nameplates in place using two stainless steel or brass screws.
- C. Contractor to provide rigid laminated engraved plastic nameplate for all signal terminal cabinets, fire alarm terminal cans, electrical disconnect switches (fused or non-fused) and data/voice cabinets. Provide and secure as noted above.

2.03 FASTENERS

- A. Fasteners for securing equipment to walls, floors and the like shall be either hot-dip galvanized after fabrication or stainless steel.

2.04 FINISH REQUIREMENTS

- A. Equipment: Refer to each electrical equipment section of these Specifications for painting requirements of equipment enclosures. Repair any final paint finish which has been damaged or is otherwise unsatisfactory, to the satisfaction of the Architect.
- B. Wiring System: In finished areas, paint all exposed conduits, boxes and fittings to match the color of the surface to which they are affixed.

PART 3 - EXECUTION

3.01 WORKMANSHIP

- A. Ensure that all equipment and materials fit properly in their installation.
- B. Perform any required work to correct improperly fit installation at no additional expense to the owner.
- C. All electrical equipment and materials shall be installed in a neat and workmanship manner in accordance with the NECA Standard of Installation Manual and Workmanship of the entire job shall be first class in every respect.

3.02 EQUIPMENT INSTALLATIONS

- A. Provide the required inserts, bolts and anchors, and securely attach all equipment and materials to their supports.
- B. Do all the cutting and patching necessary for the proper installation of work and repair any damage done.
- C. Earthquake restraints: all electrical equipment, including conduits over 2 inches in diameter, shall be braced or anchored to resist a horizontal force acting in any direction as per Title 24, part 2, table 16a-o, part 3.

- D. Structural work: All core drilling, bolt anchor insertion, or cutting of existing structural concrete shall be approved by a California registered structural consulting engineer prior to the execution of any construction. At all floor slabs and structural concrete walls to be drilled, cut or bolt anchors inserted, the contractor shall find and mark all reinforcing in both faces located by means of x-ray, pach-ometer, or prof-ometer. Submit sketch showing location of rebar and proposed cuts, cores, or bolt anchor locations for approval.

3.03 FIELD TESTS

- A. Test shall be in accordance with Acceptance testing specifications issued by the National Electrical Testing Association (NETA).
- B. Perform equipment field tests and adjustments. Properly calibrate, adjust and operationally check all circuits and components, and demonstrate as ready for service. Make additional calibration and adjustments if it is determined later that the initial adjustments are not satisfactory for proper performance. Perform equipment field test for equipment where equipment field tests are specified in the equipment Specifications. Give sufficient notice to the Architect prior to any test so that the tests may be witnessed.
- C. Provide instruments, other equipment and material required for the tests. These shall be of the type designed for the type of tests to be performed. Test instrument shall be calibrated by a recognized testing laboratory within three months prior to performing tests.
- D. Operational Tests: Operationally test all circuits to demonstrate that the circuits and equipment have been properly installed and adjusted and are ready for full-time service. Demonstrate the proper functioning of circuits in all modes of operation, including alarm conditions.
- E. Re-testing will be required for all unsatisfactory tests after the equipment or system has been repaired. Re-test all related equipment and systems if required by the Architect. Repair and re-test equipment and systems which have been satisfactorily tested but later fail, until satisfactory performance is obtained.
- F. Maintain records of each test and submit five copies to the Architect when testing is complete. All tests shall be witnessed by the Architect. These records shall include:
 - 1. Name of equipment tested.
 - 2. Date of report.
 - 3. Date of test.
 - 4. Description of test setup.
 - 5. Identification and rating of test equipment.
 - 6. Test results and data.
 - 7. Name of person performing test.
 - 8. Owner or Architect's initials.
- G. Items requiring testing shall be as noted in the additional electrical sections of these specifications.

3.04 CLEANING EQUIPMENT

- A. Thoroughly clean all soiled surfaces of installed equipment and materials.

3.05 PAINTING OF EQUIPMENT

- A. Factory Applied: Electrical equipment shall have factory applied painting system which shall, as a minimum, meet the requirements of NEMA ICS 6 corrosion-resistance test and the additional requirements specified in the technical section.
- B. Field Applied: Paint electrical equipment as required to match finish of adjacent surfaces.

3.06 RECORDS

- A. Maintain one copy of the contract Drawing Sheets on the site of the work for recording the "as built" condition. After completion of the work, the Contractor shall carefully mark the work as actually constructed, revising, deleting and adding to the Drawing Sheets as required. The following requirements shall be complied with:
 - 1. Cable Size and Type: Provide the size and type of each cable installed on project.
 - 2. Substructure: Where the location of all underground conduits, pull boxes, stub ups and etc. where are found to different than shown, carefully mark the correct location on the Drawings. Work shall be dimensioned from existing improvements.
 - 3. Size of all conduit runs.
 - 4. Routes of concealed conduit runs and conduit runs below grade.
 - 5. Homerun points of all branch circuit.
 - 6. Location of all switchgear, panels, MCC, lighting control panels, pullcans, etc.
 - 7. Changes made as a result of all approved change orders, addendums, or field authorized revisions.
 - 8. As BUILT: At the completion of the Work the Contractor shall review, certify, correct and turn over the marked up Drawings to the Architect for his use in preparing "as built" plans.
 - 9. As Built drawings for fire alarm, data, telephone, CATV/Video, intercom and clock shall also be recorded. Upon completion "As-built" documentation showing actual devices locations and devices identification as installed and labeled, including fire alarm, data, telephone, CATV/Video and int/clock wiring layout. "As-built" shall include; for example , fire alarm equipment location showing all monitor modules and end of line resistor locations. The contractor shall provide one set drawings documents and the other set in electronic CAD file representing actual as-builts. CAD files shall be AutoCAD 14 format. Obtaining CAD files from the Architect/District shall require contractor to sign CAD release form.
 - 10. As built Drawings shall be delivered to the Architect within ten (10) days of completion of construction.

3.07 CLEAN UP

- A. Upon completion of electrical work, remove all surplus materials, rubbish, and debris that accumulated during the construction work. Leave the entire area neat, clean, and acceptable to the Architect.

3.08 MECHANICAL AND PLUMBING ELECTRICAL WORK

- A. The requirements for electrical power and/or devices for all mechanical and plumbing equipment supplied and/or installed under this Contract shall be coordinated and verified with the following:
 - 1. Mechanical and Plumbing Drawings.
 - 2. Mechanical and Plumbing sections of these Specifications.
 - 3. Manufacturers of the Mechanical and Plumbing equipment supplied.
- B. The coordination and verification shall include the voltage, ampacity, phase, location and type of disconnect, control, and connection required. Any changes that are required as a result of this coordination and verification shall be a part of this Contract.
- C. The Electrical Contractor shall furnish and install the following for all mechanical and plumbing equipment:
 - 1. Line voltage conduit and wiring.
 - 2. Disconnect switches.
 - 3. Manual line voltage controls.
- D. Automatic line voltage controls and magnetic starters unless otherwise noted, shall be furnished by the Mechanical and/or Plumbing Contractor and installed and connected by the Electrical Contractor. All line voltage control wiring installed by the Electrical Contractor shall be done per directions from the Mechanical and/or Plumbing Contractor.
- E. All low voltage control wiring for Mechanical and Plumbing equipment shall be installed in conduit. Furnishing, installation and connection of all low voltage conduits, boxes, wiring and controls shall be by the Mechanical and/or Plumbing Contractor.
- F. Manual motor starters, where required, shall have toggle type operators with pilot light and melting alloy type overload relays, SQUARE D COMPANY, Class 2510, Type FG-1P (surface) or Type FS-1P (flush) or ITE, WESTINGHOUSE or GENERAL ELECTRIC equal.

3.09 ACCESS DOORS

- A. The Electrical Contractor shall furnish and install access doors wherever required whether shown or not for easy maintenance of electrical systems: As an example, fire alarm devices, controls, junction boxes, etc. Access doors shall provide for complete access to equipment for both removal and replacement of equipment.

END OF SECTION

SECTION 26 05 11

ELECTRICAL DEMOLITION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. General - Remove all material designated to be removed on the drawings and that is surplus to the needs of the system as may be designated by the Owner's Representative. Specific work shall be provided as specified below:
- B. Remove Existing Equipment - Electrical Equipment to be removed shall include but not be limited to switchboards, panel boards, concrete foundations, equipment supports, lighting fixtures, conductors, conduit, raceway and other items as shown on the drawings or specified.
- C. Clean Surface Areas - Clean all floors, streets, sidewalks, driveways, parking lots and landscaped areas of all trash and debris deposited as a result of the work. Clean daily and maintain the property free of trash and debris.

1.02 STANDARDS AND CODES

- A. Work and material shall be in compliance with and according to the requirements of the latest revision of the following standards and codes.
 - 1. California Electrical Code (CEC).

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.01 DISPOSAL

- A. Except where specifically noted otherwise on the drawings or elsewhere in these specifications, the contractor assumes ownership of all material removed from the project site and assumes all responsibility for its proper disposal.

3.02 CLEANUP

- A. Contractor shall maintain the work site in a neat and orderly state. Contractor shall remove demolition material from the job site daily. No demolition material shall be left on the job site after working hours without written approval from the Owner's Representative.

END OF SECTION

SECTION 26 05 19

LOW VOLTAGE WIRE AND CABLE

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The work of this Section consists of providing all wire and cable rated 600 volts or less, including splices and terminations, as shown on the Drawings and as described herein.

1.02 RELATED WORK

- A. See the following Specification Section for work related to the work in this Section:
 - 1. Section 26 05 33 - Conduits, Raceways and Fittings.
 - 2. Section 26 05 34 - Junction and Pull Boxes.

1.03 SUBMITTALS

- A. In accordance with Division 1.
- B. Submit complete material list with the manufacturer's specifications and published descriptive literature for all materials proposed for use.

1.04 QUALITY ASSURANCE

- A. Field tests shall be performed as specified in paragraph 3.04 of this Section.

PART 2 - PRODUCTS

2.01 CONDUCTORS

- A. Conductors shall be copper, type THHN/THWN/MTW oil and gasoline resistant, 600 volt rated insulation. Minimum power and control wire size shall be No. 12 AWG unless otherwise noted.
- B. Conductors shall be stranded except that sizes #10 and smaller for receptacle circuits shall be solid and of the sizes indicated.
- C. Minimum power and control wire size shall be No. 12 AWG unless otherwise noted.
- D. All conductors used on this Project shall be of the same type and conductor material.

2.02 CABLES

- A. All individual conductors shall be copper with type THHN/THWN, 600 volt rated insulation.
- B. Insulation Marking - All insulated conductors shall be identified with printing colored to contrast with the insulation color.
- C. Color Coding - As specified in paragraph 3.03.

- D. Special Wiring - Where special wiring is proposed by an equipment manufacturer, submit the special wiring requirements to the Owner's Representative and, if approved, provide same. Special wire shall be the type required by the equipment manufacturer.
- E. Other Wiring - Wire or cable not specifically shown on the Drawings or specified, but required, shall be of the type and size required for the application and as approved by the Owner's Representative.
- F. Manufacturer - Acceptable manufacturers including Cablec, Southwire, or equal.

2.03 TERMINATIONS

- A. Manufacturer - Terminals as manufactured by T&B, Burndy or equal.
- B. Cable Termination for Copper - Crimp style two hole NEMA spade terminals designed and rated for copper cable.
- C. Wire Terminations - Crimp on ring-tongue terminals, insulated sleeve, of proper size for the wire used.
- D. End Seals - Heat shrink plastic caps of proper size for the wire on which used.

2.04 TAPE

- A. Tape used for terminations and cable marking shall be compatible with the insulation and jacket of the cable and shall be of plastic material.

PART 3 - EXECUTION

3.01 CABLE INSTALLATION

- A. Clean Raceways - Clean all raceways prior to installation of cables as specified in Section 26 05 33 - Conduits Raceway and Fittings.
- B. Cable Pulling - Exercise care in pulling wires and cables into conduit or wireways so as to avoid kinking, putting undue stress on the cables or otherwise abrading them. No grease will be permitted in pulling cables. Only soapstone, talc, or UL listed pulling compound will be permitted. The raceway construction shall be complete and protected from the weather before cable is pulled into it. Swab conduits before installing cables and exercise care in pulling, to avoid damage to conductors.
- C. Bending Radius - Cable bending radius shall be per applicable code. Install feeder cables in one continuous length.
- D. Equipment Grounding Conductors - Provide an equipment grounding conductor, whether or not it is shown on the Drawings, in all conduits or all raceways.
- E. Panelboard Wiring - In panels, bundle incoming wire and cables which are No. 6 AWG and smaller, lace at intervals not greater than 6 inches, neatly spread into trees and connect to their respective terminals. Allow sufficient slack in cables for alterations in terminal connections. Perform lacing with plastic cable ties or linen lacing twine. Where plastic panel wiring duct is provided for cable runs, lacing is not necessary when the cable is properly installed in the duct.
- F. Provide #10awg conductors for all 20 amp 120v branch circuits over 100 feet.

3.02 CABLE TERMINATIONS AND SPLICES

- A. Splices - UL Listed wirenuts.

B. Terminations - Shall comply with the following:

1. Make up and form cable and orient terminals to minimize cable strain and stress on device being terminated on.
2. Burnish oxide from conductor prior to inserting in oxide breaking compound filled terminal.

3.03 CIRCUIT AND CONDUCTOR IDENTIFICATION

A. Color Coding - Provide color coding for all circuit conductors. Insulation color shall be white for neutrals and green for grounding conductors. Ungrounded conductor colors shall be as follows:

<u>VOLTAGE</u>	<u>208/120V</u>	<u>480/277V</u>
Phase A	Black	Brown
Phase B	Red	Orange
Phase C	Blue	Yellow
Neutral	White	Grey
Ground	Green	Green

- B. Color coding shall be in the conductor insulation for all conductors #10 AWG and smaller; for larger conductors, color shall be either in the insulation or in colored plastic tape applied at every location where the conductor is readily accessible.
- C. Circuit Identification - All underground distribution and service circuits shall be provided with plastic identification tags in each secondary box and at each termination. Tags shall identify the source panel and transformer of the circuit and the building number(s) serviced by the circuit.

3.04 FIELD TESTS

- A. All systems shall test free from short circuits and grounds, shall be free from mechanical and electrical defects, and shall show an insulation resistance between phase conductors and ground of not less than the requirements of the CEC. All circuits shall be tested for proper neutral connections.
- B. Cables are required to have a megger testing completed with a report of results submitted to the Engineer for approval.

END OF SECTION

SECTION 26 05 26

GROUNDING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The work of this section consists of furnishing, installing, connection and testing of all grounding systems as specified herein and as shown on the Drawings.

1.02 RELATED WORK

- A. See the following specification sections for work related to work in this section.
 - 1. Section 26 05 10- Electrical General Requirements.
 - 2. Section 26 05 19- Low Voltage Wire and Cable

1.03 SUBMITTALS: In accordance with Section 26 05 10 Submittals.

- A. Submit manufacturer's literature for review.

1.04 STANDARDS AND CODES

- A. American Society for Testing and Materials (ASTM) Publication:
 - 1. B8-1986, Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft.
 - 2. B228-1988, Copper Clad Steel Conductors Specification.
- B. The latest editions following applicable codes:
 - 1. California Electrical Code (CEC).
 - 2. Occupational Safety and Health Act (OSHA) standards.
 - 3. All applicable local codes, rules and regulations.

1.05 QUALITY ASSURANCE

- A. Each and every concealed connection must be inspected by the Owner's Representative before it is covered up by the Contractor.

PART 2 - PRODUCTS

2.01 GENERAL

- A. The grounding system shall consist of the grounding conductors, ground bus, ground fittings and clamps, and bonding conductors as shown on the Drawings and as required by codes and local authorities.

2.02 SYSTEM COMPONENTS

- A. Ground Rods: Ground rods shall be cone pointed copper clad Grade 40 HS steel rods conforming to ASTM B228. The welded copper encased steel rod shall have a conductivity of not less than 27% of pure copper. Rods shall be not less than 3/4-inch in diameter and ten feet long, unless otherwise indicated. Rods longer than ten feet shall be made up of ten foot units joined together with threaded couplings. The manufacturer's trademark shall be stamped near the top.
- B. Ground Conductors: Buried conductors shall be medium-hard drawn bare copper; other conductors shall be soft drawn copper. Sizes over No. 6 AWG shall be stranded conforming to ASTM B8. In all conduit runs, a green insulated copper ground wire, sized to comply with codes, shall be installed.
- C. Ground Connections: Exposed ground connections shall be high copper alloy bolted pressure types or exothermically welded type as notes. Buried connections shall be either exothermically welded type or approved compression types for connection of copper to copper or copper to steel, as required. Lug for attachment of cables to steel enclosures shall be of the binding post type with a 1/2-13NC stud. Each post shall accommodate cables from #4 AWG to #2/0 AWG.
- D. Ground Rod Boxes: Boxes shall be nine-inch diameter precast concrete units with cast iron traffic covers. Units shall be 12 inches deep. Covers shall be embossed with the wording "Ground Rod".
- E. Ground Bus: 2" x 1/4" x (length as specified on drawings) copper busbar. Provide isolation stand off bushings. Provide drilled and tapped 3/8" diameter holes on 2 foot centers. Provide "ALCU" lugs and bronze bolts. Connect busbar to main grounding system and bond to metallic domestic cold water pipe with #8 ground conductor.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Ground all equipment, including, but not limited to, panel boards, terminal cabinets and outlet boxes, for which a ground connection is required per the NEC, even though not specifically shown on the Drawings.
- B. The ground pole of receptacles shall be connected to their outlet boxes by means of a copper ground wire connecting to a screw in the back of the box.
- C. Provide a ground rod box for each ground rod so as to permit ready access for the connection and/or removal of any pressure connectors to facilitate testing.
- D. Where ground rods must be driven to depths over ten feet, increase rod diameter used, sufficiently to prevent the rod from bending or being damaged.
- E. Make embedded or buried ground connections, taps and splices with exothermically welded connections or approved compression type connectors.
- F. Make connections of grounding conductors to equipment ground buses and enclosures using binding post type connectors.
- G. Effectively bond structural steel for buildings to the grounding system, "UFER" ground.

- H. Install a ground rod in each primary handhole. Connect the ground conductor installed for each primary duct bank to the ground rod in each handhole. Bond metal conduits to handhole ground rod.

3.02 TESTING

- A. Conduct ground resistance tests using a ground resistance tester with a scale reading of 25 ohms maximum.
- B. Test methods shall conform to IEEE Standard 81 using the three electrode method. Conduct test only after a period of not less than 48 hours of dry weather.
- C. Take resistance readings for each ground rod individually and for each system as a whole without benefit of chemical treatment or other artificial means. Ground resistance readings shall not exceed 25 ohms. If readings are not to the Contracting Officer's approval, provide lengthened or additional ground rods (maximum of two additional rods).
- D. Furnish to the Owner's Representative a test report with recorded data of each ground rod location and each system.

END OF SECTION

SECTION 26 05 33

CONDUITS, RACEWAYS AND FITTINGS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The work of this section consists of furnishing and installing conduits, raceways and fittings as shown on the Drawings and as described herein.

1.02 RELATED WORK

- A. See the following specification sections for work related to the work in this section:
1. Section 26 05 35 - Underground Ducts.
 2. Section 26 05 19 - Low Voltage Wire and Cable.
 3. Section 26 05 34 - Junction and Pull Boxes

1.03 SUBMITTALS

- A. As specified in Division 1.
1. Catalog Data: Provide manufacturer's descriptive literature.
 2. Single Submittal: A single complete submittal is required for all products covered by this Section.

PART 2 - PRODUCTS

2.01 CONDUITS, RACEWAYS

- A. Electrical Metallic Tubing (EMT) shall be hot-dip galvanized after fabrication. Couplings shall be compression or setscrew type.
- B. Flexible Conduit: Flexible metal conduit shall be galvanized steel.
- C. Liquid Tight Flexible Metal Conduit (LFMC) shall be galvanized steel strip helically wound with nylon sealing cord with smooth surface flexible PVC covering.
- D. Galvanized Rigid Steel Conduit (GRS) shall be hot-dip galvanized after fabrication. Couplings shall be threaded type.
- E. Rigid Non-metallic Conduit: Rigid non-metallic conduit shall be PVC Schedule 40 (PVC-40) or NEMA Type EPC-40) conduit approved for underground use and for use with 90°C wires.
- F. The use of "MC Cable shall not be permitted without written approval.

2.02 CONDUIT SUPPORTS

- A. Supports for individual conduits shall be galvanized malleable iron one-hole type with conduit back spacer.
- B. Supports for multiple conduits shall be hot-dipped galvanized Unistrut or Superstrut channels, or approved equal. All associated hardware shall be hot-dip galvanized.
- C. Supports for EMT conduits shall be galvanized pressed steel single hole straps.
- D. Clamp fasteners shall be by wedge anchors. Shot in anchors shall not be allowed.

2.03 Fittings

- A. Provide threaded-type couplings and connectors for rigid steel conduits. Provide compression (watertight) steel type (die-cast zinc or malleable iron type fittings not allowed), or setscrew type for EMT. Provide threaded couplings and Meyers hubs for rigid steel conduit exposed to weather.
- B. Fittings for flexible conduit shall be Appleton, Chicago, IL, Type ST, O-Z Gedney Series 4Q by General Signal Corp., Terryville, CT, T & B 5300 series, or approved equal.
- C. Fittings for liquid tight flexible metal conduit shall be by Appleton, O-Z Gedney or Thomas and Betts. Fittings shall be zinc plated malleable iron or aluminum.
- D. Fittings for use with rigid steel shall be galvanized steel or galvanized cast ferrous metal; access fittings shall have gasketed cast covers and be Crouse Hinds Condulets, Syracuse, NY, Appleton Unilets, Chicago, IL, or approved equal. Provide threaded-type couplings and connectors; setscrew type and compression-type are not acceptable.
- E. Fittings for use with rigid non-metallic conduit shall be PVC and have solvent-weld-type conduit connections.
- F. Union couplings for conduits shall be the Erickson type and shall be Appleton, Chicago, IL, Type EC, O-Z Gedney 3-piece Series 4 by General Signal Corp., Terryville, CT, or approved equal. Threadless coupling shall not be used.
- G. Bushings
 - 1. Bushings shall be the insulated type.
 - 2. Bushings for rigid steel shall be insulated grounding type, O-Z Gedney Type HBLG, Appleton Type GIB, or approved equal.
- H. Conduit Sealants
 - 1. Fire Retardant Types: Fire stop material shall be reusable, non-toxic, asbestos-free, expanding, putty type material with a 3-hour rating in accordance with UL Classification 35L4 or as specified on the Drawings.

PART 3 - EXECUTION

3.01 CONDUIT, RACEWAY AND FITTING INSTALLATION

- A. For conduit runs exposed to weather provide rigid metal (GRS).
- B. For conduit run underground, in concrete or masonry block walls and under concrete slabs, install minimum 3/4" size nonmetallic (PVC) with PVC elbows. Where conduits transition from underground or under slab to above grade install wrapped rigid metal (GRS) elbows and risers.
- C. For conduit runs concealed in steel or wood framed walls or in ceiling spaces or exposed in interior spaces above six feet over the finished floor, install EMT.
- D. Interior conduits installed exposed on the wall below six feet shall be galvanized rigid steel (GRS).
- E. Flexible metal conduit shall be used only for the connection of recessed lighting fixtures and motor connections unless otherwise noted on the Drawings. Liquid-tight steel flexible conduit shall be used for motor connections.
- F. The minimum size raceway shall be 3/4-inch unless indicated otherwise on the Drawings.
- G. Installation shall comply with the CEC.
- H. From pull point to pull point, the sum of the angles of all of the bends and offset shall not exceed 270 degrees.

- I. Conduit Supports: Properly support all conduits as required by the NEC. Run all conduits concealed except where otherwise shown on the drawings.
 - 1. Exposed Conduits: Support exposed conduits within three feet of any equipment or device and at intervals not exceeding NEC requirements; wherever possible, group conduits together and support on common supports. Support exposed conduits fastened to the surface of the concrete structure by one-hole clamps, or with channels. Use conduit spacers with one-hole clamps.
 - a. Conduits attached to walls or columns shall be as unobtrusive as possible and shall avoid windows. Run all exposed conduits parallel or at right angles to building lines.
 - b. Group exposed conduits together. Arrange such conduits uniformly and neatly.
 - 2. Support all conduits within three feet of any junction box, coupling, bind or fixture.
 - 3. Support conduit risers in shafts with Unistrut Superstrut, or approved equal, channels and straps.
- H. Moisture Seals: Provide in accordance with NEC paragraphs 230-8 and 300-5(g).
- I. Where PVC conduit transitions from underground to above grade, provide rigid steel 90's with risers. Rigid steel shall be half-lap wrapped with 20-mil tape and extend minimum 12" above grade.
- J. Provide a nylon pull cord in each empty raceway.
- K. Provide galvanized rigid steel factory fittings for galvanized rigid steel conduit.
- L. Slope all underground raceways to provide drainage; for example, slope conduit from equipment located inside a building to the pull box or manhole located outside the building.
- M. Conduits shall be blown out and swabbed prior to pulling wires.

END OF SECTION

SECTION 26 05 34

JUNCTION AND PULL BOXES

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The work of this Section consists of providing all required labor, supervision, materials and equipment to satisfactorily complete all electrical installations shown on the drawings, included in these Specification, or otherwise needed for a complete and fully operating facility. The work shall include but not be limited to the following:
- B. Furnish and install all required material, supports and miscellaneous material for the satisfactory interconnection of all associated electrical systems.

1.02 RELATED WORK

- A. See the following specification sections for work related to the work of this section.
 - 1. Section 26 05 10 - General Electrical Requirements.
 - 2. Section 26 05 33 - Conduits, Raceway and Fittings.
 - 3. Section 26 05 19 - Low Voltage Wire and Cable.

1.03 STANDARDS AND CODES

- A. Submit in accordance with the requirements of Section 16010: Electrical General Provisions, the following items:
 - 1. Pull boxes larger than 6"x 6"x 4".

PART 2 - PRODUCTS

2.01 OUTLET BOXES, JUNCTION AND PULL BOXES

- A. Standard Outlet Boxes: Galvanized, one-piece die formed or drawn steel, knock-out type of size and configuration best suited to the application indicated on the Drawings. Minimum box size shall be 4 inches square by 1-1/2 inches deep with mud rings as required.
- B. Switch boxes: Minimum box size shall be 4 inches square by 1-1/2 inches deep with mud rings as required. Install multiple switches in standard gang boxes with raised device covers suitable for the application indicated.
- C. Conduit bodies: Cadmium plated, cast iron alloy. Conduit bodies with threaded conduit hubs and neoprene gasketed, cast iron covers. Bodies shall be used to facilitate pulling of controls or to make changes in conduit direction only. Splices are not permitted in conduit bodies. Crouse-Hinds Form 8 Condulets, Appleton Form 35 Unilets or equal.
- D. Sheet Metal Boxes: Use standard outlet or concrete ring boxes wherever possible; otherwise use a minimum 16 gauge galvanized sheet metal, NEMA 1 box sized to Code requirements with covers secured by cadmium plated machine screws located six inches on centers. Circle AW Products, Hoffman Engineering Company or equal.

- E. Flush Mounted Pull boxes and Junction boxes: Provide overlapping covers with flush head cover retaining screws, prime coated.

PART 3 - EXECUTION

3.01 OUTLET BOXES

A. General

1. All outlet boxes shall finish flush with building walls, ceilings and floors except in mechanical and electrical rooms above accessible ceiling or where exposed work is called for on the Drawings.
2. Install raised device covers (plaster rings) on all switch and receptacle outlet boxes installed in masonry or stud walls or in furred, suspended or exposed concrete ceilings. Covers shall be of a depth to suit the wall or ceiling finish.
3. Leave no unused openings in any box. Install close-up plugs as required to seal openings.

B. Box Layout

1. Outlet boxes shall be installed at the locations and elevations shown on the drawings or specified herein. Make adjustments to locations as required by structural conditions and to suit coordination requirements of other trades.
2. Locate switch outlet boxes on the latch side of doorways.
3. Outlet boxes shall not be installed back to back nor shall through-wall boxes be permitted.
4. For outlets mounted above counters, benches or backsplashes, coordinate location and mounting heights with built-in units. Adjust mounting height to agree with required location for equipment served.

C. Supports

1. Outlet Boxes installed in metal stud walls shall be equipped with brackets designed for attaching directly to the studs or shall be mounted on specified box supports.
2. Fixture outlet boxes installed in suspended ceiling of gypsum board or lath and plaster construction shall be mounted to 16 gauge metal channel bars attached to main ceiling runners.
3. Fixture outlet boxes installed in suspended ceilings supporting acoustical tiles or panels shall be supported directly from the structure above where pendant mounted lighting fixture are to be installed on the box.
4. Fixture Boxes above tile ceilings having exposed suspension systems shall be supported directly from the structure above.
5. Outlet and / or junction boxes shall not be supported by grid or fixture hanger wires at any locations.

3.02 JUNCTION AND PULL BOXES

A. General

1. Install junction or pull boxes where required to limit bends in conduit runs to not more than 360 degrees or where pulling tension achieved would exceed the maximum allowable for the cable to be installed. Note that these boxes are not shown on the Drawings.
2. Locate pull boxes and junction boxes in concealed locations above removable ceilings or exposed in electrical rooms, utility rooms or storage areas.
3. Install raised covers (plaster rings) on boxes in stud walls or in furred, suspended or exposed concrete ceilings. Covers shall be of a depth to suit the wall or ceiling finish.
4. Leave no unused openings in any box. Install close-up plugs as required to seal openings.
5. Identify circuit numbers and panel on cover of junction box with black marker pen.

B. Box Layouts

1. Boxes above hung ceilings having concealed suspension systems shall be located adjacent to openings for removable recessed lighting fixtures.

C. Supports

1. Boxes installed in metal stud walls shall be equipped with brackets designed for attaching directly to the studs or shall be mounted on specified box supports.
2. Boxes installed in suspended ceilings of gypsum board or lath and plaster construction shall be mounted to 16 gauge metal channel bars attached to main ceiling runners.
3. Boxes installed in suspended ceilings supporting acoustical tiles or panels shall be supported directly from the structure above.
4. Boxes mounted above suspended acoustical tile ceilings having exposed suspension systems shall be supported directly from the structure above.

END OF SECTION

SECTION 26 05 35
UNDERGROUND DUCTS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The work of this section consists of furnishing and installing raceways, raceway spacers and encasing material with necessary excavation for underground ducts.
- B. Encasement - Encasement shall be sand for all other raceways.
- C. Where required - All raceways, where run underground in and excavation shall be installed in compliance with the requirements of this Section. Conduits run underground without encasement shall be as indicated in the Drawings.

1.02 RELATED WORK

- A. See the following specification sections for work related to the work of this section.
 - 1. Section 26 05 33 - Conduit Raceway and Fittings

1.03 STANDARDS AND CODES

- A. Work and material shall be in compliance with and according to the requirements of the latest revision of the following standards and codes.
- B. National Fire Protection Association (NFPA), National Electrical Code (NEC) - Latest Revision:
 - 1. Underground Installations NEC - Article 300
 - 2. Rigid Nonmetallic Conduit NEC - Article 347
- C. California Electrical Code (CEC).
- D. Construction of Underground Electric Supply and Communication Systems, State of California Public Utilities Commission, General Order No. 128.

1.04 SUBMITTALS

- A. As specified in Division 1 and Section 26 05 10.
- B. Catalog Data: Provide manufacturer's descriptive literature.
- C. Single Submittal: A single complete submittal is required for all products covered by this Section.

PART 2 - PRODUCTS

2.01 RACEWAYS

- A. As specified in Section 26 05 33 Conduits, Raceways and Fittings.

2.02 SPACERS

- A. Molded plastic as furnished by the raceway manufacturer, to cradle and position the raceways in the excavation for placing the encasement.
- B. Shape to accurately fit the raceway, provide the correct raceway spacing, to interlock in place and stack.

PART 3 - EXECUTION

3.01 RACEWAY

- A. Install raceways in spacers. Spacers installed at intervals of five feet and within one inch each side of all bends and joints.
- B. Solvent weld connections.

END OF SECTION

SECTION 26 05 44
IN GRADE PULL BOXES

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The work of this section consists of providing all labor, supervision, tools, materials, and performing all work necessary to furnish and install pre-cast concrete vaults, and pull boxes with necessary excavation.

1.02 RELATED WORK

- A. See the following specification sections for work related to the work of this section.
1. 31 23 00 Excavation and Backfill.
 2. 32 13 13 Portland Cement Concrete.
 3. 26 05 43 Underground Ducts.

1.03 STANDARDS AND CODES

- A. Work and material shall be in compliance with and according to the requirements of the latest revision of the following standards and codes.
1. National Fire Protection Association (NFPA), National Electrical Code (NEC) - Latest Revision.
 2. California Electrical Code (CEC).
 3. American Society for Testing and Materials (ASTM):
 - a. A 185 - Welded Steel Wire Fabric for Concrete Reinforcement.
 - b. A 615 - Deformed and Plain Billet - Steel Bars for Concrete Reinforcement.
 - c. C 33 - Concrete Aggregates.
 - d. C 478 - Pre-cast Reinforced Concrete Vault Sections, Specification for.

1.04 SUBMITTALS

As specified in Division 1 and Section 26 05 10.

- A. Catalog Data: Provide manufacturer's descriptive literature.
- B. Single Submittal: A single complete submittal is required for all products covered by this Section.

PART 2 - PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. General Requirements

1. Concrete vaults and pull boxes for electrical power, controls and other communication circuits shall consist of pre-cast reinforced concrete boxes, extensions' bases, and covers as specified herein and as indicated on the Drawings. Pre-cast units shall be the product of a manufacturer regularly engaged in the manufacture of pre-cast vaults and pull boxes. Acceptable manufacturers are Christy, Utility Vault, Brooks, Associated Concrete or equal.

B. Construction

1. Pre-cast concrete vaults and pull boxes for electrical power distribution and communication circuits with associated risers and tops shall conform to ASTM C478 and ACI 318. Vaults and

pull boxes shall be the type noted on the Drawings and shall be constructed in accordance with the applicable details as shown. Tops, walls and bottoms shall consist of reinforced concrete. Walls and bottom shall be of monolithic concrete construction. Duct entrances and windows shall be located near the corners of structures to facilitate cable racking. Provide all necessary lugs, rabbets, and brackets. Set pulling-in irons and other built-in items in place prior to pouring concrete. A pulling-in iron shall be installed in the wall opposite each duct entrance. All steel other than "rebar" shall be hot dipped galvanized after fabrication.

C. Cable Racks

1. Vaults shall be provided with galvanized cable racks, including rack arms and insulators, and shall be adequate to accommodate the indicated cables; porcelain insulators shall be provided for electrical vaults only.

D. Covers

1. The word "ELECTRICAL" shall be cast in the top face of all electrical power vault and cable boxes.
2. The words "FIRE ALARM" shall be cast in the top face of all fire alarm vault and cable boxes.
3. The word "SIGNAL" shall be cast in the top face of all telecom, intercom, CATV, data, EMS, security and/or clock vault and cable boxes.

E. Sumps

1. Where indicated on the drawings, drain sumps shall be provided.

F. Concrete

1. Aggregates used in the concrete mix, either coarse or fine, excluding light weight aggregates, shall conform to ASTM C 33. Aggregates shall be properly graded and free of deleterious substances to produce a homogeneous concrete mix when blended with cement.

G. Cement

1. The cement shall be Type II low alkali Portland cement and shall meet the requirement of ASTM C 150.

H. Compressive Strength

1. Sufficient cement content shall be used per batch to produce a minimum compressive strength of 3,000 psi at 28 days.

I. Reinforcing Steel

1. Welded wire mesh for street lighting boxes shall conform to ASTM A 185.
2. Reinforcing bars for primary and secondary electrical vaults and pull boxed, and communication vaults and pull boxes shall be intermediate grade billet steel conforming to ASTM A 615.

J. Ladders

1. Ladders for vaults shall be sized as required, stationary galvanized steel.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Pre-cast vaults and pull boxes shall be installed approximately where indicated on the Drawings. The exact location of each vault or pull box shall be determined after careful consideration has been given to the location of other utilities, grading, and paving. All vaults, cable boxes and secondary pull boxes shall be installed with a minimum of 6-inch thick crushed rock or sand bedding.
- B. Paved areas
 - 1. Vaults and pull boxes located in areas to be paved shall be installed such that the top of the cover shall be flush with the finished surface of the paving.
- C. Unpaved Areas
 - 1. In unpaved areas, the top of vaults and pull box covers shall be approximately 2 inches above finished grade.
- D. Joint Seals
 - 1. Section joints of pre-cast vaults and pull boxes shall be sealed with compound as recommended by the manufacturer.
- E. Trenching, Backfilling, and Compaction
 - 1. Trenching, backfilling and compaction shall be as specified in Section 02200 - Excavation and Backfill.
- F. Grounding
 - 1. Ground rods and an associated copper ground loop shall be installed in all vaults. Ground loop shall be properly connected to the cable shielding, at each cable joint or splice by means of a minimum number 4 AWG or equivalent braided tinned copper wire. Ground rods shall be protected with a double wrapping of pressure-sensitive plastic tape for a distance of two inches above and six inches below concrete penetrations. Ground wires shall be neatly and firmly attached to vault cable support racks.

END OF SECTION

SECTION 26 05 73.11

SHORT-CIRCUIT/COORDINATION STUDY/ARC FLASH HAZARD ANALYSIS

PART 1 - GENERAL

1.01 SCOPE

- A. The contractor shall furnish short-circuit and protective device coordination studies which shall be prepared by the equipment manufacturer.
- B. The contractor shall furnish an Arc Flash Hazard Analysis Study per NFPA 70E - Standard for Electrical Safety in the Workplace, reference Article 130.5 and Informative Annex D.
- C. Related sections
 - 1. Section 16016 – Arc Flash Hazard Analysis Study

1.02 REFERENCES

- A. Institute of Electrical and Electronics Engineers, Inc. (IEEE):
 - 1. IEEE 141 – Recommended Practice for Electric Power Distribution and Coordination of Industrial and Commercial Power Systems
 - 2. IEEE 242 – Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems
 - 3. IEEE 399 – Recommended Practice for Industrial and Commercial Power System Analysis
 - 4. IEEE 241 – Recommended Practice for Electric Power Systems in Commercial Buildings
 - 5. IEEE 1015 – Recommended Practice for Applying Low-Voltage Circuit Breakers Used in Industrial and Commercial Power Systems
 - 6. IEEE 1584 – Guide for Performing Arc-Flash Hazard Calculations
- B. American National Standards Institute (ANSI):
 - 1. ANSI C57.12.00 – Standard General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers
 - 2. ANSI C37.13 – Standard for Low Voltage AC Power Circuit Breakers Used in Enclosures
 - 3. ANSI C37.010 – Standard Application Guide for AC High Voltage Circuit Breakers Rated on a Symmetrical Current Basis
 - 4. ANSI C 37.41 – Standard Design Tests for High Voltage Fuses, Distribution Enclosed Single-Pole Air Switches, Fuse Disconnecting Switches and Accessories
 - 5. ANSI C37.5 – Methods for Determining the RMS Value of a Sinusoidal Current Wave and Normal-Frequency Recovery Voltage, and for Simplified Calculation of Fault Currents
- C. The National Fire Protection Association (NFPA)
 - 1. NFPA 70 - National Electrical Code, latest edition
 - 2. NFPA 70E – Standard for Electrical Safety in the Workplace

1.03 SUBMITTALS FOR REVIEW/APPROVAL

- A. The short-circuit and protective device coordination studies shall be submitted to the design engineer prior to receiving final approval of the distribution equipment shop drawings and/or prior to release of equipment drawings for manufacturing. If formal completion of the studies may cause delay in equipment manufacturing, approval from the engineer may be obtained for preliminary submittal of sufficient study data to ensure that the selection of device and characteristics will be satisfactory.

1.04 SUBMITTALS FOR CONSTRUCTION

- A. The results of the short-circuit, protective device coordination and arc flash hazard analysis studies shall be summarized in a final report. No more than five (5) bound copies of the complete final report shall be submitted. For large system studies, submittals requiring more than five (5) copies of the report will be provided without the section containing the computer printout of the short-circuit input and output data. Additional copies, where required, shall be provided on CD in PDF format.
- B. The report shall include the following sections:
 - 1. One-line diagram showing protective device ampere ratings and associated designations, cable size & lengths, transformer kVA & voltage ratings, motor & generator kVA ratings, and switchgear/switchboard/panelboard designations
 - 2. Descriptions, purpose, basis and scope of the study
 - 3. Tabulations of the worst-case calculated short circuit duties as a percentage of the applied device rating (automatic transfer switches, circuit breakers, fuses, etc.); the short circuit duties shall be upward-adjusted for X/R ratios that are above the device design ratings
 - 4. Protective device time versus current coordination curves with associated one-line diagram identifying the plotted devices, tabulations of ANSI protective relay functions and adjustable circuit breaker trip unit settings
 - 5. Multi-function relay setting file printouts including all ANSI protective relay functions and associated logic and control. Metering, communication, and control logic settings not associated with ANSI protective functions are not required.
 - 6. Fault study input data, case descriptions, and current calculations including a definition of terms and guide for interpretation of the computer printout
 - 7. Incident energy and flash protection boundary calculations
 - 8. Comments and recommendations for system improvements, where needed
 - 9. Executive Summary including source of information and assumptions made

1.05 QUALIFICATIONS

- A. The short-circuit, protective device coordination and arc flash hazard analysis studies shall be conducted under the supervision and approval of a Registered Professional Electrical Engineer skilled in performing and interpreting the power system studies. The Registered Professional Electrical Engineer shall be a full-time employee of the Engineering Services Organization.

PART 2 - PRODUCT

2.01 STUDIES

- A. Contractor to furnish short-circuit and protective device coordination studies as prepared by equipment manufacturer. By using the equipment manufacturer the study allows coordination of proper breakers, fuses, and current transformers. The coordination study shall begin with the utility company's feeder protective device and include all of the electrical protective devices down to and include the largest feeder circuit breaker and motor starter in the 480 Volt motor control centers and power distribution panelboards. The study shall also include variable frequency drives, harmonic filters, power factor correction equipment, transformers and protective devices associated with variable frequency drives, emergency and standby generators associated paralleling equipment and distribution switchgear.
- B. The contractor shall furnish an Arc Flash Hazard Analysis Study per NFPA 70E - Standard for Electrical Safety in the Workplace, reference Article 130.5 and Informative Annex D.

2.02 DATA COLLECTION

- A. Contractor shall furnish all field data as required by the power system studies. The Engineer performing the short-circuit, protective device coordination and arc flash hazard analysis studies shall furnish the Contractor with a listing of required data immediately after award of the contract. The Contractor shall expedite collection of the data to eliminate unnecessary delays and assure completion of the studies as required for final approval of the distribution equipment shop drawings and/or prior to the release of the equipment for manufacturing.
- B. Source combination may include present and future utility supplies, motors, and generators.
- C. Load data utilized may include existing and proposed loads obtained from Contract Documents provided by Owner or Contractor.
- D. Include fault contribution of existing motors in the study, with motors < 50 hp grouped together. The Contractor shall obtain required existing equipment data, if necessary, to satisfy the study requirements.

2.03 SHORT-CIRCUIT AND PROTECTIVE DEVICE EVALUATION STUDY

- A. Use actual conductor impedances if known. If unknown, use typical conductor impedances based on IEEE Standards 141, latest edition.
- B. Transformer design impedances and standard X/R ratios shall be used when test values are not available.
- C. Provide the following:
 - 1. Calculation methods and assumptions
 - 2. Selected base per unit quantities
 - 3. One-line diagram of the system being evaluated with available fault at each bus, and interrupting rating of devices noted
 - 4. Source impedance data, including electric utility system and motor fault contribution characteristics
 - 5. Typical calculations
 - 6. Tabulations of calculated quantities
 - 7. Results, conclusions, and recommendations
- D. Calculate short-circuit momentary and interrupting duties for a three-phase bolted fault at each:

1. Electric utility's supply termination point
 2. Incoming switchgear
 3. Unit substation primary and secondary terminals
 4. Low voltage switchgear
 5. Motor control centers
 6. Standby generators and automatic transfer switches
 7. Branch circuit panelboards
 8. Other significant locations throughout the system
- E. For grounded systems, provide a bolted line-to-ground fault current study for areas as defined for the three-phase bolted fault short-circuit study.
- F. Protective Device Evaluation:
1. Evaluate equipment and protective devices and compare to short circuit ratings
 2. Adequacy of switchgear, motor control centers, and panelboard bus bracing to withstand short-circuit stresses
 3. Adequacy of transformer windings to withstand short-circuit stresses
 4. Cable and busway sizes for ability to withstand short-circuit heating
 5. Notify Owner in writing, of existing, circuit protective devices improperly rated for the calculated available fault current

2.04 PROTECTIVE DEVICE COORDINATION STUDY

- A. Proposed protective device coordination time-current curves shall be graphically displayed on log-log scale paper.
- B. Include on each curve sheet a complete title and one-line diagram with legend identifying the specific portion of the system covered.
- C. Terminate device characteristic curves at a point reflecting maximum symmetrical or asymmetrical fault current to which device is exposed.
- D. Identify device associated with each curve by manufacturer type, function, and, if applicable, tap, time delay, and instantaneous settings recommended.
- E. Plot the following characteristics on the curve sheets, where applicable:
1. Electric utility's protective device
 2. Medium voltage equipment relays
 3. Medium and low voltage fuses including manufacturer's minimum melt, total clearing, tolerance, and damage bands
 4. Low voltage equipment circuit breaker trip devices, including manufacturer's tolerance bands
 5. Transformer full-load current, magnetizing inrush current, and ANSI transformer withstand parameters

6. Conductor damage curves
 7. Ground fault protective devices, as applicable
 8. Pertinent motor starting characteristics and motor damage points
 9. Pertinent generator short-circuit decrement curve and generator damage point
 10. Other system load protective devices for the largest branch circuit and the largest feeder circuit breaker in each motor control center
- F. Provide adequate time margins between device characteristics such that selective operation is provided, while providing proper protection.
- G. Select each primary protective device required for a delta-wye connected transformer so that the characteristics or operating band is within the transformer parameters which includes a parameter equivalent to 58% of the ANSI withstand point to afford protection for secondary line-to-ground faults.
- H. Separate low voltage power circuit breakers from each other and the associated primary protective device by a 16% current margin for coordination and protection in the event of secondary line-to-line faults.
- I. Engineer shall provide settings file printouts for all multifunction relays supplied under this contract including all ANSI protective relay functions and associated logic and control. Metering, communication, and control logic settings not associated with ANSI protective functions are not required.

2.05 ARC FLASH HAZARD ANALYSIS

- A. The arc flash hazard analysis shall be performed according to the IEEE 1584 equations that are presented in NFPA70E-2012, Informative Annex D.
- B. When appropriate, the short circuit calculations and the clearing times of the phase overcurrent devices will be retrieved from the short-circuit and coordination study model. Alternative methods shall be presented in the proposal.
- C. The flash protection boundary and the incident energy shall be calculated at all significant locations in the electrical distribution system (switchboards, switchgear, motor-control centers, panelboards, busway and splitters) where work could be performed on energized parts.
- D. The Arc-Flash Hazard Analysis shall include all MV, 575v, & 480v locations and significant locations in 240 volt and 208 volt systems fed from transformers equal to or greater than 125 kVA.
- E. Safe working distances shall be specified for calculated fault locations based upon the calculated arc flash boundary considering an incident energy of 1.2 cal/cm².
- F. The Arc Flash Hazard analysis shall include calculations for maximum and minimum contributions of fault current magnitude. The minimum calculation shall assume that the utility contribution is at a minimum and shall assume a minimum motor load. Conversely, the maximum calculation shall assume a maximum contribution from the utility and shall assume motors to be operating under full-load conditions.
- G. Arc flash computation shall include both line and load side of main breaker calculations, where necessary.
- H. Arc Flash calculations shall be based on actual overcurrent protective device clearing time. Maximum clearing time will be capped at 2 seconds based on IEEE 1584-2002 section B.1.2.

2.06 REPORT SECTIONS

A. Input Data:

1. Utility three-phase and line-to-ground available contribution with associated X/R ratios
2. Short-circuit reactance of rotating machines with associated X/R ratios
3. Cable type, construction, size, # per phase, length, impedance and conduit type
4. Bus duct type, size, length, and impedance
5. Transformer primary & secondary voltages, winding configurations, kVA rating, impedance, and X/R ratio
6. Reactor inductance and continuous ampere rating
7. Aerial line type, construction, conductor spacing, size, # per phase, and length

B. Short-Circuit Data:

1. Source fault impedance and generator contributions
2. X to R ratios
3. Asymmetry factors
4. Motor contributions
5. Short circuit kVA
6. Symmetrical and asymmetrical fault currents

C. Recommended Protective Device Settings:

1. Phase and Ground Relays:
 - a. Current transformer ratio.
 - b. Current setting.
 - c. Time setting.
 - d. Instantaneous setting.
 - e. Specialty non-overcurrent device settings.
 - f. Recommendations on improved relaying systems, if applicable.
2. Circuit Breakers:
 - a. Adjustable pickups and time delays (long time, short time, ground).
 - b. Adjustable time-current characteristic.
 - c. Adjustable instantaneous pickup.
 - d. Recommendations on improved trip systems, if applicable.

D. Incident energy and arc flash boundary calculations.

1. Arcing fault magnitude

2. Device clearing time
3. Duration of arc
4. Arc flash boundary
5. Working distance
6. Incident energy
7. Recommendations for arc flash energy reduction

PART 3 - EXECUTION

3.01 FIELD ADJUSTMENT

- A. Adjust relay and protective device settings according to the recommended settings table provided by the coordination study. Field adjustments to be completed by the engineering service division of the equipment manufacturer under the Startup and Acceptance Testing contract portion.
- B. Make minor modifications to equipment as required to accomplish conformance with short circuit and protective device coordination studies.
- C. Notify Owner in writing of any required major equipment modifications.
- D. Following completion of all studies, acceptance testing and startup by the field engineering service division of the equipment manufacturer, a 2-year warranty shall be provided on all components manufactured by the engineering service parent manufacturing company.

3.02 ARC FLASH WARNING LABELS

- A. The vendor shall provide a 4 in. x 4 in. thermal transfer type label of high adhesion polyester for each work location analyzed.
- B. The label shall have an orange header with the wording, "WARNING, SHOCK & ARC FLASH HAZARD", and shall include the following information:
 1. Location designation
 2. Nominal voltage
 3. Arc flash boundary
 4. Incident energy
 5. Working distance
 6. Shock Boundaries
 7. Engineering report number, revision number and issue date
- C. Labels shall be machine printed, with no field markings
- D. Arc flash labels shall be provided in the following manner and all labels shall be based on recommended overcurrent device settings.
 1. For each 600, 480 and applicable 208 volt panelboards and disconnects, one arc flash label shall be provided
 2. For each motor control center, one arc flash label shall be provided

3. For each low voltage switchboard, one arc flash label shall be provided
 4. For each switchgear, one flash label shall be provided
 5. For medium voltage switches one arc flash label shall be provided
- E. Labels shall be field installed by the engineering service division of the equipment manufacturer under the Startup and Acceptance Testing contract portion.

3.03 ARC FLASH TRAINING

- A. The equipment vendor shall train personnel of the potential arc flash hazards associated with working on energized equipment (minimum of 4 hours). Maintenance procedures in accordance with the requirements of NFPA 70E, Standard For Electrical Safety Requirements For Employee Workplaces, shall be provided in the equipment manuals. The training shall be certified for continuing education units (CEUs) by the International Association for Continuing Education Training (IACET).

[END OF SECTION 26 05 73.1.1]

SECTION 26 22 13

ENERGY EFFICIENT LIGHTING AND DISTRIBUTION TRANSFORMERS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The work of this section consists of providing dry-type energy efficient transformers per NEMA TP1, with primary and secondary voltages of 600V and less and capacity ratings 15kVA through 750kVA as shown on Drawings and as described in this section.

1.02 RELATED WORK

- A. See the following specification sections for work related to the work in this section.
 - 1. Section 26 05 19 - Line Voltage Wire and Cable.
 - 2. Section 26 05 26 - Grounding.

1.03 SUBMITTALS: In accordance with Division 1.

- A. Shop Drawings: Submit manufacturer's name and nameplate data as follows:
 - 1. KVA rating.
 - 2. Nominal primary voltage.
 - 3. Tap voltages.
 - 4. Nominal secondary voltage.
 - 5. Percent impedance.
 - 6. Weight.
 - 7. Physical dimensions and mounting requirements.
- B. Submit manufacturer's guaranteed no-load loss value for transformer.
- C. Suppliers asking consideration as an approved equal shall submit complete, warranted performance data and physical dimensions for similar transformers. Data shall be submitted for each size specified, and shall be received by the consultant engineer no less than 10 days prior to the bid due date for consideration.
- D. Operation and Maintenance Data: Submit the manufacturer's operation and maintenance data in accordance with Division 1. Copies of the factory and field test reports shall be included in this submittal.

1.04 FACTORY TESTING

- A. Tests on transformers shall include the manufacturer's standard tests, including winding resistance, ratio, polarity, phase relation, no-load loss, impedance, full load losses, and dielectric tests. Certified copies shall show compliance with all referenced standards.

PART 2 - PRODUCTS

2.01 ENERGY EFFICIENT DRY TYPE TRANSFORMER

- A. All insulating materials are to exceed NEMA ST20 standards and be rated for 220°C UL component recognized insulation system.
- B. Transformers 15kVA and larger shall be 150°C temperature rise above 40°C ambient. Transformers 25kVA and larger shall have a minimum of 4 - 2.5% full capacity primary taps. Exact voltages and taps to be as designated on the plans or the transformer schedule.

- C. The maximum temperature of the top of the enclosure shall not exceed 50°C rise above a 40°C ambient.
- D. Transformers shall be low loss type with minimum efficiencies per NEMA TP1 when operated at 35% of full load capacity. Efficiency shall be tested in accord with NEMA TP2.

Single Phase		Three Phase	
kVA	Efficiency	kVA	Efficiency
15	97.7%	15	97.0%
25	98.0%	30	97.5%
37.5	98.2%	45	97.7%
50	98.3%	75	98.0%
75	98.5%	112.5	98.2%
100	98.6%	150	98.3%
167	98.7%	225	98.5%
250	98.8%	300	98.6%
333	98.9%	500	98.7%
		750	98.8%

- E. The transformer(s) shall be rated as indicated in the following schedule
 Identification Number(s)
 kVA Rating
 Voltages
 Phase
- F. Transformer coils shall be of the continuous wound construction and shall be impregnated with nonhygroscopic, thermosetting varnish.
- G. All cores to be constructed with low hysteresis and eddy current losses. Magnetic flux densities are to be kept well below the saturation point to prevent core overheating. Cores for transformers greater than 500kVA shall be clamped utilizing insulated bolts through the core laminations to ensure proper pressure throughout the length of the core. The completed core and coil shall be bolted to the base of the enclosure but isolated by means of rubber vibration-absorbing mounts. There shall be no metal-to-metal contact between the core and coil and the enclosure except for a flexible safety ground strap. Sound isolation systems requiring the complete removal of all fastening devices will not be acceptable.
- H. The core of the transformer shall be visibly grounded to the enclosure by means of a flexible grounding conductor sized in accordance with applicable UL and NEC standards.
- I. The transformer enclosures shall be ventilated and be fabricated of heavy gauge, sheet steel construction. The entire enclosure shall be finished utilizing a continuous process consisting of degeasing, cleaning and phosphatizing, followed by electrostatic deposition of polymer polyester powder coating and baking cycle to provide uniform coating of all edges and surfaces. The coating shall be UL recognized for outdoor use. The coating color shall be ANSI 49.
- J. Sound levels shall be warranted by the manufacturer not to exceed the following:
 15 to 50KVA - 45dB;
 51 to 150kVA - 50dB;
 151 to 300kVA - 55dB;
 301 to 500kVA - 60dB;
 501 to 700kVA - 62dB;
 701 to 1000kVA - 64dB;
 1001 to 1500kVA - 65dB;
 1501 to 2000kVA- 66dB

- K. Transformers installed outdoors shall be NEMA 3R, unless otherwise noted on the Drawings.
- L. Dry-type energy efficient transformer shall be as manufactured by Square D or approved equal.

PART 3 - EXECUTION

3.01 TRANSFORMER INSTALLATION

- A. Transformer shall be where indicated on the Drawings. Indoor transformers shall have code and manufacturers recommended clearances from adjacent walls. In no case should this clearance be less than six inches.
- B. Transformer shall be connected with flexible liquid tight metallic conduit to prevent the transmission of sound through the conduit system. All transformers shall be installed on resilient vibration-isolating mounting pads.
- C. Transformer neutral grounding shall be sized in accordance with requirements for separately derived systems and shall be connected to the nearest cold water pipe with supplementary driven ground. Ground rod and connections shall be as detailed in Section 16060.

3.02 FIELD TESTS

- A. Insulation-Resistance Tests: 480 volt windings shall be testing with a 1000 volt megohm meter; 208 or 240 shall be test with a 500 volt megohm meter. All tests shall be applied for not less than 5 minutes and until three consecutive readings, one minute part, are obtain. Readings shall be recorded every 30 seconds for the first two minutes and every minute thereafter.
- B. Acceptance: Acceptance with be based on satisfactory completion of the insulation resistance tests.

END OF SECTION

SECTION 26 24 16

PANELBOARDS AND DISTRIBUTION PANELS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The work of this Section consists of providing panelboards and circuit breakers as shown on the Drawings and as described herein.

1.02 RELATED WORK

- A. See the following specification sections for work related to the work in this Section.
 1. Section 26 05 10 - General Electrical Requirements
 2. Section 26 05 26 - Grounding
 3. Section 26 05 19 - Line Voltage Wire and Cable
 4. Section 26 28 16 - Circuit Breakers

1.03 SUBMITTALS

- A. Shop Drawings - As specified in Division 1 and Section 26 05 10. For each panelboard and distribution panels furnished under this Contract, submit manufacturer's name, catalog data, and the following information:
 1. Panelboard / distribution panel type.
 2. Main bus and terminal connection sizes.
 3. Location of line connections.
 4. Cabinet dimension.
 5. Gutter space.
 6. Gauge of boxes and fronts.
 7. Finish data.
 8. Voltage rating.
 9. Breaker manufacturer, types, trip rating, and interrupting ratings.
 10. When information is available on the Drawings, show breaker circuit numbers and locations along with trip ratings on a panelboard layout.
- B. Single Submittal - A single complete submittal is required for all products covered by this Section.
- C. Closeout Submittals: Submit operation and maintenance data for panelboards and circuit breakers including nameplate data, parts lists, factory and field-test reports, recommended maintenance procedures and typewritten as-built panel schedules. Submit in accordance with Division 1.

1.04 WARRANTY

- A. Manufacturer shall warrant specified equipment free from defects in materials and workmanship for the lesser of one (1) year from the date of installation or eighteen (18) months from the date of purchase.

PART 2 - PRODUCTS

2.01 PANELBOARDS

- A. General: Lighting and Receptacle Panelboards shall be the automatic circuit breaker type. The number and arrangement of circuits, trip ratings, spares and blank spaces for future circuit breakers shall be as shown on the Drawings or, if not shown, 42 circuits. All circuit breakers shall be quick-make, quick-break, thermal-magnetic bolt-on type, with 1, 2 or 3 poles as shown, each with a single operating handle. Tandem or piggyback breakers shall not be used.
- B. Nameplates
1. Each panelboard shall have a field mounted identifying, rigid, plastic nameplate giving the panel identification as shown on the Drawings. Nameplates shall be laminated with black characters minimum 3/16" high on a white laminated background. Nameplates shall be attached with screws.
 2. Each panelboard shall have a manufacturer's nameplate showing the voltage, bus rating, number of phases, frequency and number of wires.
- C. Construction
1. Door and trim shall be finished to match color of surrounding wall. Box shall be hot-dip galvanized, field finished to match the front.
 2. Panelboards and enclosures shall conform to requirements of all relevant codes. Panelboards shall be suitable for use as service equipment.
 3. Panelboards shall be furnished with door-in-door or hinged trim fronts with key latch, on inner door and a typed directory card and holder. Panelboard circuits shall be arranged with odd numbers on the left and even numbers on the right. Provide weatherproof, NEMA type 3R enclosures for outdoor installation.
- D. Busbars: Panelboard busbars shall be phase sequence type suitable for bolt-on circuit breakers. All busbars shall be copper. Panelboard bus current ratings shall be determined by heat-rise tests conducted in accordance with UL 67.
1. Busbars shall be braced for the indicated short circuit level scheduled.
 2. Busbars shall be installed completely throughout the panel for installation of both required and future breakers. Schedules indicate spaces for future breakers.
 3. Busbars shall be designed so circuit breakers may be changed without machining, drilling or tapping.
 4. Separate isolated Neutral and Ground busbars shall be provided. If called for on panel schedules, Neutral busbar may be oversized. Ground busbar shall be identified with green stripe and fully bonded to enclosure.
- E. Circuit Breakers: Circuit breakers shall be the molded case type with trip and interrupting ratings as shown on the Drawings.
- F. Series ratings shall not be allowed unless specifically noted on drawings.
- G. Typed Circuit Directories: All panelboards shall have typed directories identifying all circuits installed behind plastic cover provided by the panelboard manufacturer.
- H. Manufacturer
1. Panelboards shall be Square D, Siemens or approved equal.

2.02 DISTRIBUTION PANELS

- A. General: Distribution panels shall be the automatic circuit breaker type. The number and arrangement of circuits, trip ratings, spares and blank spaces for future circuit breakers shall be as shown on the Drawings. All circuit breakers shall be quick-make, quick-break, thermal-magnetic

bolt-on type, with 1, 2 or 3 poles as shown, each with a single operating handle. Tandem or piggyback breakers shall not be used.

B. Nameplates

1. Each distribution board shall have a field mounted identifying, rigid, plastic nameplate giving the panel identification as shown on the Drawings. Nameplates shall be laminated with black characters minimum 3/16" high on a white laminated background. Nameplates shall be attached with screws.
2. Each distribution panel shall have a manufacturer's nameplate showing the voltage, bus rating, number of phases, frequency and number of wires.

C. Construction

1. Door and trim shall be finished to match color of surrounding wall. Box shall be hot-dip galvanized, field finished to match the front.
2. Distribution panels and enclosures shall conform to requirements of all relevant codes. Distribution panels shall be suitable for use as service.
3. Distribution panels shall have a front door with key latch and a typed directory card and permanently attached holder. Adhesive backed holders are not acceptable. Distribution panel's circuits shall be arranged with odd numbers on the left and even numbers on the right. Provide weatherproof, NEMA type 3R enclosures for outdoor installation.

D. Busbars: Distribution panel's busbars shall be phase sequence type suitable for bolt-on circuit breakers. All busbars shall be copper. Panelboard bus current ratings shall be determined by heat-rise tests conducted in accordance with UL 67.

1. Busbars shall be braced for the indicated short circuit level scheduled.
2. Busbars shall be installed completely throughout the panel for installation of both required and future breakers. Schedules indicate spaces for future breakers.
3. Busbars shall be designed so circuit breakers may be changed without machining, drilling or tapping.
4. Separate isolated Neutral and Ground busbars shall be provided. If called for on panel schedules, Neutral busbar may be oversized. Ground busbar shall be identified with green stripe and fully bonded to enclosure.

E. Circuit Breakers: Circuit breakers shall be the molded case type with trip and interrupting ratings as shown on the Drawings.

F. Series rating shall not be allowed unless specifically noted on drawings.

G. Manufacturer

1. Distribution panels shall be Square D, Siemens or approved equal.

PART 3 - EXECUTION

3.01 INSTALLATION: Panelboards and Distribution Panels shall be installed where indicated on the Drawings, and in accordance with the manufacturer's instructions.

3.02 INSTALLATION

- A. Panelboards and Distribution Panels shall be installed with the top of the box 6'-6" above the floor. Panelboards and Distribution Panels shall be plumb within 1/8-inch. The highest breaker-operating handle shall not be higher than 72 inches above the floor.
- B. Floor mounted Panelboards and Distribution Panels shall be installed on a concrete house keeping slab. The concrete slab shall be a minimum of 4" above finished floor, with minimum of 6" extension

beyond equipment. The concrete slab shall have a 1/2" chamfer. See Division 3 for concrete work requirements.

3.03 FIELD TESTS

- A. Insulation Resistance Tests: Perform insulation resistance tests on circuits with #2 AWG and larger conductors to be energized with a line-to-neutral voltage of 120 volts or more. Make these tests after all equipment has been connected, except that equipment, which may be damaged by the test voltage, shall not be connected. Test the insulation with a 500Vdc insulation resistance tester with a scale reading 100 megohms. The insulation resistance shall be 2 megohms or more. Submit results for review.
- B. Grounding: Grounding shall conform to Section 26 05 26.
- C. Continuity: Panelboard and Distribution Panel circuits shall be tested for continuity prior to energizing. Continuity tests shall be conducted using a dc device with a bell or buzzer.

END OF SECTION

SECTION 26 27 26

DEVICES WIRING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The work of this section consists of:
 - 1. Furnishing, installing, and connecting all duplex receptacles complete with wall plates and/or covers, as shown on the Drawings.
 - 2. Furnishing, installing and connecting all single pole and three-way switches complete with wall plates and or handle operators, as shown on the Drawings.

1.02 RELATED WORK

- A. See the following specification sections for work related to the work of this section:
 - 1. Section 26 05 33 - Conduits, Raceways and Fittings.
 - 2. Section 26 05 19 - Low Voltage Wire and Cable.
 - 3. Section 26 05 34 - Junction and Pull Boxes.

1.03 SUBMITTALS: As specified in Division 1.

- A. Submit manufacturers published descriptive literature properly marked to identify the items to be supplied.
- B. A single complete submittal is required for all products covered by this Section.

PART 2 - PRODUCTS

2.01 RECEPTACLES

- A. General - Receptacles shall be heavy duty, high abuse, grounding type.
- B. Duplex Receptacles
 - 1. Receptacles shall be specification grade, rated 20 ampere, two-pole, 3-wire, 120 volt, NEMA 5-20 configuration, self-grounding with screw terminals. Color shall be ivory or as selected by the Architect.
 - 2. Devices shall have a nylon composition face, back and side wired.
 - 3. Manufacturer: Leviton #5362 Series, Hubbell #5362-I Series.
- C. GFCI Receptacles
 - 1. Device shall be Smart Lock with lockout action, rated 20 ampere, 2-pole, 3-wire, 120 volt, conforming to NEMA 5-20 configuration. Face shall be nylon composition. Unit shall have an LED type green indicator light, test and reset push buttons. Color shall be ivory unless otherwise noted.
 - 2. GFCI component shall meet UL 2003 Class A standards with a tripping time of 1/40 second at 5 milliampere current unbalance. Operating range shall extend from -31°F to 158°F. Unit shall have transient voltage protection and shall have a diagnostic indication for miswiring.
 - 3. Manufacturer: Leviton #8898-I Series.
- D. GFCI Blank Face Devices

1. Device shall be Smart Lock with lockout action, rated 20 ampere, 2-pole, 3-wire, 120 volt, blank face, dead front. Face shall be nylon composition. Unit shall have a test and reset push buttons. Color shall be ivory unless otherwise noted.
 2. GFCI component shall meet UL 2003 Class A standards with a tripping time of 1/40 second at 5 milliampere current unbalance. Operating range shall extend from -31°F to 158°F. Unit shall have transient voltage protection and shall have a diagnostic indication for miswiring.
 3. Manufacturer: Leviton #8590-I Series.
- E. Surge Suppression Receptacles
1. Device shall be rated 20 ampere, 2-pole, 3-wire, 120 volt. Face shall be nylon composition. Unit shall have an LED type "Power-on" indication light and damage-alert audible alarm. Color shall be ivory unless otherwise noted.
 2. Surge suppression protection shall be listed to UL standard 1449 and shall instantly absorb a transient surge of 6,000 volts minimum. A minimum of four (4) Metal Oxide Varistors shall be utilized to absorb transients.
 3. Manufacturer: Leviton #8380-I Series, Hubbell #HBL8362S Series.

2.02 SWITCHES

- A. Switches shall be rated 20 amperes to 120/277 volts ac. Units shall be flush mounted, self-grounding, quiet operating toggle devices. Handle color shall be ivory or as selected by the Architect.
1. Manufacturer: Leviton #1221-2I Series, Hubbell #HBL1221 Series.
- B. Timed switches: Shall be as designed by Paragon Electric Company # ET2000f, Watt Stopper TS-100 or Leviton # 6215M rated for the voltage specified on drawings. Time out shall be adjustable from 5 minutes up to 12 hours. Unit shall be provided with warning alarm.
- C. Motion Sensor shall be dual technology as designed by Watt Stopper DT series. Use protective wire covers in restrooms, multi-use, cafeteria, etc.

2.03 PLATES

- A. General - Plates shall be of the style and color to match the wiring devices, and of the required number of gangs. Plates shall conform to NEMA WD 1, UL 514 and FS W-P-455A. Plates on finished walls shall be non-metallic or stainless steel. Plates on unfinished walls and on fittings shall be of zinc plated steel or case metal and shall have rounded corners and beveled edges.
- B. Non-Metallic: Plates shall be plain with beveled edges and shall be nylon or reinforced fiberglass.
- C. Stainless Steel: Plates shall be .040 inches thick with beveled edges and shall be manufactured from No. 430 alloy having a brushed or satin finish.
- D. Cast Metal: Plates shall be cast or malleable iron covers with gaskets so as to be moisture resistant or weatherproof.
- E. Blank Plates: Cover plates for future telephone outlets shall match adjacent device wall plates in appearance and construction.

PART 3 - EXECUTION

3.01 INSTALLATION OF WIRING DEVICES

- A. Interior Locations: In finished walls, install each device in a flush mounted box with washers as required to bring the device mounting strap level with the surface of the finished wall. On unfinished walls, surface mount boxes level and plumb.

B. Mounting Heights: Measure locations of wall outlets from the finished floor to the center of the outlet box. Adjust boxes so that the front edge of the box shall not be farther back from the finished wall plane than 1/4-inch. Adjust boxes so that they do not project beyond the finished wall. Height above finished floor to center of device unless otherwise noted on Drawings shall be as follows:

- | | | |
|----|-----------------|--------------------------------|
| 1. | Receptacles | 18 Inches above finished floor |
| 2. | Toggle Switches | 48 Inches above finished floor |

C. Receptacles

1. Ground each receptacle using a grounding conductor, not a yoke or screw contact.
2. Install receptacles with connections spliced to the branch circuit wiring in such a way that removal of the receptacle will not disrupt neutral continuity and branch circuit power will not be lost to other receptacles in the same circuit.

3.02 INSTALLATION OF WALL PLATES

- A. General - Plates shall match the style of the device and shall be plumb within 1/16-inch of the vertical or horizontal.
- B. Interior Locations, Finished Walls: Install non-metallic plates so that all four edges are in continuous contact with the finished wall surfaces. Plaster filling will not be permitted. Do not use oversized plates or sectional plates.
- C. Interior Locations, Unfinished Walls: Install stainless steel or cast metal cover plates.
- D. Exterior Locations: Install cast metal plates with gaskets on wiring devices in such a manner as to provide a rain tight weatherproof installation. Cover type shall match box type.
- E. Future Locations: Install blanking cover plates on all unused outlets.
- F. All receptacles shall be labeled with panel and circuit number. Contractor shall provide 3/8" clear label tape on each wall plate with 1/4" black machine lettering.

3.03 TESTS

A. Receptacles

1. After installation of receptacles, energize circuits and test each receptacle to detect lack of ground continuity, reversed polarity, and open neutral condition.

END OF SECTION

SECTION 26 28 16

CIRCUIT BREAKERS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The work of this Section consists of providing circuit breakers as shown on the Drawings and as described herein.

1.02 RELATED WORK: See the following Specification Sections for work related to the work in this Section.

- A. Section 26 05 10 - General Electrical Requirements
- B. Section 26 24 16 - Panelboards and Distribution Panels

1.03 SUBMITTALS

- A. Shop Drawings - Submittals shall be in accordance with Division 1. For each circuit breaker furnished under this Contract, submit manufacturer's name, catalog data, and the following information:
 - 1. Terminal connection sizes.
 - 2. Voltage rating.
 - 3. Breaker manufacturer, types, trip ratings and interrupting ratings.
- B. Single Submittal - A single complete submittal is required for all products covered by this Section.
- C. Closeout Submittals: Submit in accordance with Division 1 and Section 26 05 10 operation and maintenance data for circuit breakers including nameplate data, parts lists, manufacturer's circuit breaker timer, current, coordination curves, factory and field test reports and recommended maintenance procedures.

1.04 WARRANTY

- A. Manufacturer shall warrant specified equipment free from defects in materials and workmanship for the lesser of one (1) year from the date of installation of eighteen (18) months from the date of purchase.

PART 2 - PRODUCTS

2.01 CIRCUIT BREAKER: Each circuit breaker shall consist of the following:

- A. A molded case breaker with an over center toggle-type mechanism, providing quick-make, quick-break action. Each circuit breaker shall have a permanent trip unit containing individual thermal and magnetic trip elements in each pole. Circuit breakers shall have variable magnetic trip elements which are set by a single adjustment to assure uniform tripping characteristics in each pole.
- B. Breaker shall be calibrated for operation in an ambient temperature of 40°C.
- C. Each circuit breaker shall have trip indication by handle position and shall be trip-free.

- D. Three pole breakers shall be common trip.
- E. The circuit breakers shall be constructed to accommodate the supply connection at either end of the circuit breaker. Circuit breaker shall be suitable for mounting and operation in any position.
- F. Breakers shall be rated as shown on Drawings.
- G. Series rating of circuit breakers shall not be allowed unless specifically noted on drawings.
- H. Breakers shall be UL listed. Circuit breakers shall have removable lugs.
- I. Lugs shall be UL listed for copper and aluminum conductors.
- J. Breakers shall be UL listed for installation of mechanical screw type lugs.
- K. Circuit breakers serving HACR rated loads shall be HACR type. Circuit breakers serving other motor loads shall be motor rated.
- L. Breakers indicated as "current limiting " (CL), shall be of the non-fused type; Square D I-Limiter, Cutler Hammer Limit-R, or ITE Sentron only.

PART 3 - EXECUTION

3.01 MOUNTING

- A. The highest breaker operating handle shall not be higher than 72 inches above the floor.

END OF SECTION

SECTION 31 01 90

LANDSCAPE AND SITE MAINTENANCE

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Landscape maintenance and related work as shown on the Drawings and specified herein including, but not necessarily limited to, the following:
 - 1. Tree, shrub, ground cover and turf areas.
 - 2. Irrigation systems.
 - 3. General site clean-up.
- B. Related Requirements:
 - 1. Section 32 80 00 - Irrigation
 - 2. Section 32 90 00 - Planting

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. State of California, Business and Transportation Agency, Department of Transportation (Caltrans) "Standard Specifications."

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.

1.04 ACTION SUBMITTALS

- A. Product Data: Manufacturer's product information on pesticides and herbicides to be used for approval prior to use.

1.05 QUALITY ASSURANCE

- A. Control of Work: Comply with Section 5 of the Standard Specifications.
- B. Control of Materials: Comply with Section 6 of the Standard Specifications.
- C. 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 Landscape Maintenance Period.

1.06 LANDSCAPE MAINTENANCE PERIOD

- A. Landscape Maintenance Period shall be 90 calendar days.
- B. Continuously maintain the entire project area during the progress of the work, during the specified Landscape Maintenance Period or until Final Acceptance of the project by the Owner's Representative.
- C. Landscape Maintenance Period shall not start until all elements of construction, planting and irrigation for the entire project are completed in accordance with Contract Documents. A prime requirement is that turf and landscape areas shall be planted and that turf areas shall show an even, healthy stand of "sod-like" turf which shall have been mown twice. If such criteria are met to the satisfaction of the Owner's

Representative, a written notification shall be issued to establish the effective beginning date of Landscape Maintenance Period. Additionally, elements included in the Pre-maintenance Punch-list shall have been completed to the satisfaction of the Owner's Representative. The Landscape Maintenance period shall, at the discretion of the Owner's Representative, be allowed to start and finish at different times in different areas as applicable.

- D. A day of improper maintenance, as determined by the Owner's Representative, shall not be credited as an acceptable Landscape Maintenance Period day. The Landscape Maintenance Period shall be extended on a day-for-day basis should this occur until proper maintenance, as determined by the Owner's Representative, is being performed.
- E. Contractor shall secure the project site against trespass, vandalism, and theft during the Landscape Maintenance Period. Security procedures shall be coordinated with the Owner's Representative.
- F. Access to fields by Owner in each project area may be required prior final acceptance of turf. Softball and baseball fields are anticipated to be used by Owner for games or practice. Contractor shall coordinate its mowing schedule and other maintenance schedules with Owner. School use will have priority over maintenance.

1.07 GUARANTEE

- A. All work executed under this section shall be guaranteed against any and all poor, inadequate or inferior materials and/or workmanship, as determined by the Owner's Representative, for the entire Landscape Maintenance Period and for a period of one year after Final Acceptance of project.
- B. The Contractor shall install all replacement material in conformance with the Contract Documents.

1.08 FINAL ACCEPTANCE

- A. Upon completion of all project work, including Landscape Maintenance Period, the Owner's Representative will, upon written request from the Contractor (2 working day minimum notice), make an observation to determine conformance with the Contract Documents.
- B. If, at the final project observation, work is found at variance with the Contract Documents, or is otherwise unacceptable, the Owner's Representative shall issue a punch-list of items requiring attention to the Contractor. The Contractor shall repair, replace, or otherwise correct all non-compliant work, continue Landscape Maintenance Period, and make another written request to the Owner's Representative to verify punch-list completion. If punch-list is found to be incomplete, or if site is still found to be unacceptable, the Contractor shall be back-charged as necessary for this and all additional observations required to issue Final Acceptance. All replacement materials and installations shall be in accordance with the Contract Documents. Remove rejected work and materials immediately from project. Prior to Final Acceptance, Contractor shall provide the Owner's Representative with all Record Drawings and written Guaranty Statements in accordance with the Contract Documents.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Materials used shall either conform to Specifications in other Sections or shall otherwise be acceptable to the Owner's Representative. The Owner's Representative shall be given a monthly record of all herbicides, insecticides and disease control chemicals used.
- B. Maintenance Fertilizer: "Gro-Power High Nitrogen" as available through Gro-Power, Inc., 800-473-1307, or accepted equal, and shall contain the following chemical analysis:

<u>Percent</u>	<u>Chemical</u>
14%	nitrogen
4%	phosphoric acid
9%	potash

- C. Humus: Inactive, decomposed organic material approved by Owner's Representative.

PART 3 - EXECUTION

3.01 MAINTENANCE

- A. General: Proper maintenance, including watering, weeding, mowing, edging, fertilization, repairing, and protection is required until Final Acceptance of the entire project but not less than the specified Landscape Maintenance Period.
- B. Watering: Water appropriately for each plant type to insure vigorous and healthy growth until work is accepted. Water or irrigate in a manner to prevent runoff or erosion. When hand watering, use a "water wand" to break the water force.
- C. Weeding: Entire project site shall be kept free of weeds at all times. Control new weed growth with pre-emergent herbicides. If weeds develop, use legally approved herbicides.
1. No herbicide shall be used without the Owner's Representative prior consent. Use herbicides in accordance with manufacturer's recommendations. If selective herbicides are used, extreme caution shall be observed so as not to damage other plants. Spraying shall only be done under windless conditions.
 2. Disease and Pest Control: Disease and insect damage shall be controlled by the use of fungicides and insecticides, subject to the prior consent of the Owner's Representative. Mole and gopher mitigation shall be accomplished using legal means other than poison baits.
- D. Staking: Stakes shall remain in place through the maintenance and guaranty periods and shall be periodically inspected and adjusted by the Contractor to prevent rubbing that causes bark wounds, loosen for proper growth or other appropriate reasons.
- E. Protection: The Contractor shall maintain protection of planting areas until Final Acceptance. Damaged areas shall be repaired or replaced at the Contractor's expense. Install a temporary maintenance fence using 4-foot blaze orange with steel driven stakes, or acceptable equal, around all turf areas for the entire length of Landscape Maintenance Period.
- F. Trash: Remove trash in all project areas plus adjacent pedestrian walkways and parking areas for the entire length of Landscape Maintenance Period.
- G. Replacement: Refer to the Article "Guarantee" in Part 1.
- H. Fertilizing: Turf shall be fertilized on day 45 and 85 after initial seeding or installation with 20 pounds of fertilizer per 1,000 square feet.

3.02 TURF MAINTENANCE

- A. Mowing and Edging
1. Turf shall not be allowed to exceed 3 inches in height and shall not be mown shorter than 1-1/2 inches in height. Turf shall be well established, free of bare spots and weeds, and of a "sod-like" quality to the satisfaction of the Owner's Representative prior to Final Acceptance.
 2. All grass clippings shall be picked up and removed from the site and premises.
 3. Let turf areas dry out enough so that mower wheels do not skid, tear, or mark the surface.

4. Edges shall be trimmed at least twice monthly or as needed for neat appearance. Clippings shall be completely removed and disposed of off-site.
- B. Watering: Turf shall be watered at such frequency as weather conditions require to replenish soil moisture below root zone and to establish healthy turf areas.
- C. Disease Control: Control all turf diseases throughout the Landscape Maintenance Period with legally approved fungicides and herbicides.
- D. Weed Control: Control broad leaf weeds with selective, legally approved herbicides. No herbicide shall be used without the prior consent of the Owner's Representative.
- E. Replacement: At or near the end of specified Landscape Maintenance Period, a final observation of turf areas will be made jointly by the Owner's Representative and Contractor. Remove deceased areas and unhealthy stands of turf from the site; do not bury into the soil. Replant all applicable areas with materials and in a manner acceptable to the Owner's Representative.

3.03 BIORETENTION SOD MAINTENANCE

- A. Mowing and Edging
 1. Sod shall be allowed to grow to develop a natural appearance with semi-annual mowing, or as determined by the Owner's Representative. During mowing, sod shall be trimmed gradually so that no more than 1/3 of the leaf blade is removed during a single trimming. Turf shall be well established, free of bare spots and weeds, and of a "sod-like" quality to the satisfaction of the Owner's Representative prior to Final Acceptance.
 2. All grass clippings shall be picked up and removed from the site and premises.
 3. Let sod areas dry out enough so that mower wheels do not skid, tear, or mark the surface.
 4. Edges shall be trimmed during semi-annual mowing, or as needed for neat appearance. Clippings shall be completely removed and disposed of off-site.
- B. Watering: Bioretention sod shall be watered at short and frequent intervals during the first 7 to 14 days after installation. Thereafter site shall be watered with such frequency as weather conditions require to replenish soil moisture below root zone and to establish healthy turf areas.
- C. Disease Control: Control all turf diseases throughout the Landscape Maintenance Period with legally approved fungicides and herbicides.
- D. Weed Control: Control broad leaf weeds with selective, legally approved herbicides. No herbicide shall be used without the prior consent of the Owner's Representative.
- E. Replacement: At or near the end of specified Landscape Maintenance Period, a final observation of bioretention sod areas will be made jointly by the Owner's Representative and Contractor. Remove deceased areas and unhealthy stands of turf from the site; do not bury into the soil. Replant all applicable areas with materials and in a manner acceptable to the Owner's Representative.

3.04 ATHLETIC FIELD TURF MAINTENANCE AND ACCEPTANCE

- A. Current cultural management practices may be modified in accordance with tissue test results or environmental conditions. Fertilizer composition, rate, or source may be adjusted based on current soil and tissue test results and existing environmental conditions.
- B. The following list represents the minimum required data that must be recorded in a field operations log:
 1. Chemical Application Logs: All labels, application rates, equipment used to apply chemicals shall be kept in the maintenance log. Chemicals shall include all fertilizers, bio-stimulants, growth regulators, fungicides, herbicides, and pesticides.

2. Cultural maintenance activities such as mowing, sample collection, and seeding shall be recorded.
 3. Irrigation Applications: Use of the irrigation system shall be documented as to zones used, duration of application, and any problems with coverage or system components.
 4. System repair logs for each system shall be maintained. Record replaced or repaired items such as irrigation heads and valves, or any drainage components in the appropriate system repair log.
- C. The Contractor shall be responsible for the performance and operation of the playing field irrigation system during the construction, maintenance periods and until final acceptance. The Contractor shall keep a technically qualified supervisor on site and maintain adequate labor, equipment and supplies in reserve to immediately repair the system or components in the event of any deficiency or failure, during the interim maintenance period.
- D. Contractor shall provide all operations necessary to maintain the field throughout the Maintenance Period. The following list of items represents the minimum operations necessary to maintain the fields. Maintenance items should, at the minimum, include:
1. Mowing: Turf shall be cut with a dedicated mower. Cutting height will be determined by environmental conditions, condition of sod, and time of year or activities. Turf height shall be maintained using only sharp, clean equipment capable of cutting heights of 1 to 2-1/4 inches. The initial cutting or subsequent cuttings shall remove not more than 1/3 of the grass leaf. Turf shall be maintained to a neat appearance. Remove cuttings from site. Turf shall not be allowed to exceed 2-1/4 inches in height and shall not be mown shorter than one and one half 1-1/2 inches in height.
 2. Turf shall be established to be turned over with a 1-1/2-inch height for mowing.
 3. Weed and Pest Control: The Contractor shall maintain the turf free from disease and infestation.
 - a. Required treatments shall be made according to the needs of the field as determined by the Owner's Representative.
 - b. Comply with applicable requirements of Federal, State, and Local laws, regulations and codes having jurisdiction over chemical treatments.
 - c. The Contractor shall apply suitable preventative or post infection fungicides to protect the quality of the turf.
 - d. Special attention shall be required during the seedling establishment period for damping off diseases.
 4. Turf areas shall be allowed to dry out sufficiently so that mower wheels do not skid, tear, or mark the surface.
 5. Edges shall be trimmed as needed for neat appearance but at least twice monthly. Clippings shall be removed and disposed of off-site.
- E. Turf Acceptance: Final acceptance will follow final approval by the Owner's Representative of the punch list and the following criteria:
1. Turf has rooted into the rootzone mix to a depth of 6 inches and has formed a mature sod mat. This will be determined by random samples being pulled from the rootzone with the Owner's Representatives in attendance. If less than 80 percent of the random tests pass after not less than 15 samples have been pulled from the field areas, then the fields will not be considered acceptable. If any tests are below 5 inches, then the field in question will not be accepted.
 2. The playing field surface is in a safe and playable condition.
 3. Turf is free of open sod joints, dead or bare spots in excess of 3 square inches.
 4. Maintenance log is complete and all equipment manuals and documentation delivered to the Owner.

3.05 IRRIGATION SYSTEM

- A. System Observation: The Contractor shall visually check all systems for proper operation on a weekly basis and make necessary repairs. Equipment shall be adjusted as necessary for proper coverage and function.
- B. Controllers: Program automatic controllers for appropriate seasonal water requirements. Perform a full instruction session in the presence of the Owner's designated maintenance personnel demonstrating

programming, system testing, and trouble shooting. Include instructions on how to turn off system in case of emergency.

- C. Repairs: Repairs made to the irrigation system shall be at the Contractor's expense. Repairs, when required, shall be made within 24 hours of discovery by either Owner or Contractor.

3.06 INFIELD MAINTENANCE

- A. Infield fines shall be maintained during maintenance period. This includes warning tracks, bullpens, mounds, home plate area, and similar features.
- B. Areas shall be kept free of weeds and trash.
- C. Pitching mound and home plate areas shall be covered during rains. Cover shall be removed after rains.
- D. Mound area and home plate shall be turned over being firm and finished in accordance with the Drawings.
- E. Eroded or otherwise lost material shall be replaced.

3.07 FIELD QUALITY CONTROL

- A. Final Review:
 - 1. At, or near the end of specified Landscape Maintenance Period, the Contractor shall make a written request for a final review and the work shall be reviewed for conformance with the Construction Documents.
 - 2. If the work is not accepted at time of review, a punch-list of items requiring attention will be prepared by the Owner's Representative and issued to the Contractor for correction.
 - 3. The Landscape Maintenance Period shall be extended at Contractors sole cost, as necessary.
 - 4. Upon completion of the punch-list, the Contractor shall again make written request for review. If, upon re-visiting the site, it is found that the punch-list has not been completed, the review shall end and a subsequent visit shall not be scheduled until the Contractor can assure the Owner the work is complete. The incomplete punch-list review meeting and any further visits and reviews, and re-inspections required due to Contractor not being prepared, or non-conformance with the Construction Documents, shall be back charged to the Contractor.
- B. Final Acceptance: When work is found to be in conformance with the Contract Documents, subject to the discretion of the Owner's Representative, a statement of Final Acceptance shall be issued to the Contractor.

END OF SECTION

SECTION 31 20 00

EARTH MOVING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Site excavation and backfilling as shown on the Drawings including, but is not necessarily limited to, the following:
 - 1. Topsoil stripping, stockpiling, and replacement into planting areas.
 - 2. Rough grading.
 - 3. Filling and backfilling to attain required grades.
 - 4. Excavating for paving, footings, and foundations.

- B. Related Requirements:
 - 1. Section 01 33 00 - Submittal Procedures
 - 2. Section 01 71 23 - Field Engineering
 - 3. Section 01 78 39 - Project Record Drawings
 - 4. Section 02 41 13 - Site Clearing and Demolition
 - 5. Section 31 23 00 - Excavation and Fill
 - 6. Section 32 01 90 - Existing Tree Protection and Maintenance
 - 7. Section 32 11 00 - Base Courses
 - 8. Section 32 90 00 - Planting

1.02 REFERENCES

- A. California Building Code (CBC).

- B. American Society for Testing and Materials (ASTM):
 - 1. D 1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort.

- C. California Occupational Safety and Health Standards (OSHA):
 - 1. Article 6 - Excavations and Shoring.

- D. State of California, Business and Transportation Agency, Department of Transportation (Caltrans) "Standard Specifications."

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action and Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.

1.04 CLOSEOUT SUBMITTALS

- A. Project Record Drawings:
 - 1. Conform to requirements specified in Section 01 78 39 - Project Record Documents.
 - 2. Accurately record locations of utilities remaining, re-routed utilities, new utilities, and newly discovered utilities by horizontal dimensions, elevations, inverts, and slope gradients.

1.05 ACTION SUBMITTALS

- A. Import Topsoil:

1. It is the Contractor's responsibility to determine if import topsoil is required on the Project.
2. If required, Contractor shall submit four 1/2-pound samples in nominal 1 quart-sized "zip-lock" plastic bags for each proposed import topsoil. Each sample shall include current accompanying fertility and structure analyses prepared by a recognized soil and plant laboratory.

1.06 QUALITY ASSURANCE

- A. Adhere to requirements, recommendations, and Best Management Practices (BMPs) for storm water management as may be outlined in the Project Storm Water Pollution Prevention Plan (SWPPP) prepared for this project, or as required by governing agencies.
- B. Geotechnical Investigation:
 1. A Geotechnical Report is available for use on this Project. The recommendations contained therein have been incorporated into the Contract Documents.
 2. Accuracy, sufficiency, and competency of Geotechnical Report are not ratified by the Owner or its design consultants and remain the sole responsibility of Geotechnical Engineer.
 3. The Geotechnical Report is available from the Owner.
 4. Unless otherwise specified or indicated on the Drawings, it is intended that all work shall be done in accordance with applicable provisions of the Geotechnical Report.
- C. The Owner may retain the services of the Geotechnical Engineer to make recommendations based on the soil conditions encountered the results of field and laboratory tests, and observations of the activities performed under this Section.
 1. If, in opinion of the Geotechnical Engineer, work performed does not meet technical or design requirements stipulated, the Contractor shall make necessary readjustments to the approval of the Geotechnical Engineer.
 2. No deviations from the Contract Documents shall be made without specific and written acceptance of the Owner's Representative.
 3. In event of conflict between the Specifications and recommendations contained in Geotechnical Report, the Owner's Representative and Geotechnical Engineer shall be notified.
 - a. Contractor shall follow clarification and interpretation issued through the Owner's Representative at no extra cost to the Owner.
 - b. If clarification or interpretation should change scope of work, there will be mutually agreed-to adjustment in the Contract price by written Change Order.
 4. The Geotechnical Engineer will not inspect the Contractor's safety measures.
- D. Compaction densities specified for structural fills under footings, slabs, or pavements shall be determined in accordance the Geotechnical Engineer's written recommendations.
- E. Certification:
 1. The Contractor shall certify source and type of backfill and topsoil proposed to be incorporated into the work, at the request of the Owner's Representative.
 2. The Contractor shall certify elevations of excavations, footings, subgrades, and finish grades with the use of a Licensed Surveyor, at Contractor's expense, at the request of the Owner's Representative.
- F. Control of Work: Conform to Section 5 of the Standard Specifications.
- G. Control of Materials: Conform to Section 6 of the Standard Specifications.

1.07 PROTECTION

- A. Protect all existing structures, fences, roads, sidewalks, paving, curbs, and other items as necessary from earthwork activity.

- B. Protect above or below grade utilities which are to remain.
- C. Protect trees to remain in accordance with Section 32 01 90 - Existing Tree Protection and Maintenance as applicable.
- D. Repair damage to any existing site features which are to remain. Repair and restoration shall be equal to quality and appearance of prior condition and to the satisfaction of the Owner's Representative.

1.08 FIELD CONDITIONS

- A. Underground Utilities: Unknown buried utility lines may exist. If encountered, notify Owner's Representative immediately for direction and re-direct work to avoid delay.
 - 1. Cooperate and coordinate with Owner's Representative and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.
 - 2. Do not interrupt existing utilities serving occupied facilities without proper notification to, and written direction from, Owner's Representative.
- B. Wet Conditions: No grading operations shall be conducted when excessively wet conditions exist as determined by the Owner's Representative.
- C. Contractor shall provide de-watering equipment as required to continue scheduled operations and provide optimum working conditions at no additional cost to Owner.
- D. Dry Conditions: Contractor shall apply sufficient water to materials during construction to properly compact materials and control dust. Contractor shall provide dust control in conformance with Section 10 of Standard Specifications and shall provide water to subgrades as necessary to achieve compaction goals.

1.09 GRADE STAKES AND LINES

- A. Grading and subgrading shall be controlled by Contractor-installed intermediate grade stakes and lines necessary to obtain the finished grade elevations shown or implied in the Drawings. Subgrade and finish grade surfaces shall conform to the control planes established by these grade stakes and lines.
- B. Protect and maintain all existing benchmarks, monuments, and other reference points. If disturbed or destroyed, they shall be replaced at the Contractor's expense.
- C. Contractor shall set temporary benchmarks as necessary to properly complete construction operations.

1.10 SURVEYING

- A. Contractor shall be responsible for hiring a licensed professional surveyor to perform all surveying, layout and staking in accordance with requirements specified in Section 01 71 23 - Field Engineering. Contractor shall be responsible for informing Owner's Representative a minimum 2 working days' notice when staking and layout is scheduled so that a review of completed chalk lines and staking can take place.

1.11 TOLERANCES

- A. Refer to related specification sections for grading tolerances of specified improvements.

PART 2 - PRODUCTS

2.01 PERFORMANCE CRITERIA

- A. Excavations shall not exceed plus or minus 1/10-foot variation from dimensions and elevations shown or noted, unless otherwise accepted by Owner's Representative.
- B. Grading Tolerance: Refer to related specification sections for grading tolerances of specified improvements.

2.02 MATERIALS

- A. Fill Material: Soil excavated from the site or imported conforming to requirements for fill material contained in applicable portions of Division III Grading, Section 19 - Earthwork of the Standard Specifications, unless modified by recommendations for fill material contained in the Geotechnical Report. Imported fill shall be approved by the Geotechnical Engineer before importation to the site.
- B. Topsoil: Excavated material from top 6 inches maximum of existing grade at unpaved areas and/or import material graded free of roots and rocks larger than two inches, subsoil, debris, weeds, large mats of grass, and other deleterious material. Topsoil shall be approved by the Owner's Representative and comply with the additional requirements specified in Section 32 90 00 - Planting.
- C. Subsoil: Excavated material below top 6 inches of existing grade, graded free of clay clods larger than 6 inches, rocks larger than 3 inches, and debris.
- D. Permeable Fills: As specified in Section 32 11 00 - Base Courses and conforming to recommendations for granular fill in the Geotechnical Report.
- E. Water: Clean and free from deleterious amounts of acids, alkalis, salts, and organic matter.
- F. Additional Materials: As noted in the Geotechnical Report.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Identify all required lines, levels, contours, datum, control points and property lines required to properly establish limits of work.
- B. Verify elevations of critical existing grades as noted on Drawings and as directed by Owner's Representative. Notify Owner's Representative of discrepancies prior to start of work and re-direct work to avoid delay.
- C. Identify all known below grade utilities. Stake and flag locations.
- D. Identify and flag surface grades and utilities.
- E. Contact Underground Service Alert (USA), 800-642-2444, and local utility companies to verify locations of existing utilities a minimum of 5 working days prior to excavation.

3.02 PROTECTION

- A. Maintain and protect existing utilities remaining which pass through work area.

- B. Perform excavation work near utilities by hand. Provide necessary protection as the work progresses.
- C. Provide and maintain protection for walks, curbs, drains, trees, corners of structures, and other improvement, as necessary to prevent damage.
- D. Barricade and/or cover open excavations occurring as part of this work and post with warning lights to the satisfaction of the Owner's Representative. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
- E. Keep adjacent properties, streets and drives clean of any dirt, dust, or stains caused by earthwork operations.
- F. Upon discovery of unknown utility or concealed conditions, notify the Owner's Representative immediately and re-direct work to avoid delay.
- G. Control dust on and near the work, and on and near off-site borrow areas.
 - 1. Thoroughly moisten surfaces as required to prevent dust from being a nuisance to the public, neighbors, and concurrent performance of any other activities that may occur on the site.
 - 2. Non-compliance with proper dust control measures will be cause for issuance of a "stop work" order by the Owner until such time as satisfactory measures can be implemented.

3.03 TOPSOIL EXCAVATION

- A. Excavate topsoil from areas scheduled for paving or rough grading and stockpile material in neat wind-row(s) and in location(s) previously established and accepted in coordination with the Owner's Representative and which will cause least interference to construction operations.
- B. Do not excavate topsoil that has become wetted to, or beyond, the saturation point that would be required for optimum compaction.
- C. Stockpile topsoil in wind-row(s) of a height not to exceed 8 feet, protect from erosion, and cover as necessary to prevent formation of dust.
- D. Topsoil staging areas shall be clearly defined and protected from other grading and utility operations.

3.04 ROUGH GRADING

- A. Grade site subsoil to establish proper subgrade elevations and site contouring as described or implied in the Drawings:
- B. Contouring:
 - 1. Construct landforms depicted in the Drawings to the satisfaction of the Owner's Representative.
 - 2. "Round-off" tops of slopes.
 - 3. "Feather" toes of slopes.
- C. Compaction:
 - 1. Compact subgrade and engineered fill in accordance with the procedures and to relative compaction percent indicated in the Geotechnical Report.
 - 2. Compact by power tamping, rolling, or combinations thereof as accepted by Geotechnical Engineer.
 - a. Where impractical to use rollers in close proximity to adjacent construction, compact by mechanical tamping.
 - b. Scarify, moisture condition, and recompact any layer not attaining compaction until required density is obtained.
 - 3. Repeat compaction procedure until proper grade is attained.

4. In planting areas, fill in maximum 8-inch loose lifts compacted to between 85 percent and 88 percent relative compaction.
- D. Remove all excess subsoil material from site and dispose of in a legal manner. Refer to "Material Storage" below.
- E. Entire project or individual field area shall be rough graded at one time. No earthwork operation shall occur for partial field areas without receiving direction from the Owner or prior written approval from the Owner.

3.05 EXCAVATION

- A. Remove and dispose of all miscellaneous materials encountered when establishing required grade elevations:
 1. Miscellaneous materials can include but are not limited to: pavements and other obstructions, underground structures, utilities, abandoned irrigation materials, and other materials encountered per the discretion of the Owner's Representative.
- B. Stability of Excavations:
 1. Comply with any applicable recommendations contained within the Project Geotechnical Report and requirements of agencies having jurisdiction.
 2. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.
- C. De-watering: Provide and maintain, at all times during construction, ample means and devices with which to promptly remove and properly dispose of water from any source entering structural excavation, pipe trenches, or other excavations. All costs incurred from de-watering activities shall be paid for by the Contractor.
- D. Excavation for Structures: Conform to elevations and dimensions shown in the drawings within a tolerance of plus-or-minus 1/10 (0.10) of a foot, and extending a sufficient distance from footings and foundations to permit placing and removal of concrete form-work, installation of services, and quality review.
- E. Excavation for Pavements: Cut surface under pavements to comply with cross-sections, elevations, and grades as shown in the Drawings.
- F. Material Storage:
 1. Stockpile satisfactory excavated materials where appropriate, until required for use.
 2. Stockpile topsoil and subgrade soil in separate piles.
 3. Place, grade, and shape stockpiles for proper drainage.
 4. Locate and retain stockpiles away from edge of excavations.
 5. Dispose of excess soil material in a legal fashion after it has become evident that the material is no longer needed on the project and is of no value to the Owner.

3.06 TOPSOIL PLACEMENT

- A. Thoroughly cross-rip all subgrade soil to a depth of 12 inches prior to placing the specified thickness of topsoil back into all applicable planting areas. Secure review and acceptance of ripping depth prior to placement of topsoil. Refer to Section 32 90 00 - Planting for this process.
- B. Topsoil placement requirements for planting areas shall be as follows:
 1. Planting Areas: A minimum of 6 inches of clean, acceptable topsoil.
 2. Topsoil shall not be placed until all earthwork and utility operations are complete.
 3. Topsoil shall be installed at one time for entire project or entire field area. No partial placements shall occur.

- C. Compact topsoil to 85 percent to 88 percent relative density.
- D. Maintain slopes and gradients established during subgrade operations and shape landforms to satisfaction of the Owner's Representative.
- E. Refer to Section 32 90 00 - Planting for finish grading information and finish grades at edge of planting areas and hardscape.

3.07 FIELD QUALITY CONTROL

- A. Tolerances: Conform to Section 19 of the Standard Specifications, unless more stringent requirements in these Contract Documents are provided, in which place the more stringent tolerances shall govern. Refer to Section 01 71 23 - Field Engineering for additional project requirements.
- B. The Owner Representative shall review and accept work at the following stages:
 - 1. Topsoil removal and stockpile.
 - 2. Grading plan for project. Plan shall provide strategy for grading sequence for entire site at one time or by field. Limits and sequence shall be reviewed and coordinated.
 - 3. Cross ripping of subgrade shall be reviewed and observed.

END OF SECTION

SECTION 31 23 00

EXCAVATION AND FILL

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Trenching, backfilling, and compaction required for, but not necessarily limited to, the following:
 - 1. Sanitary sewer line installation.
 - 2. Storm drainage system installation.
 - 3. Potable water line installation.
 - 4. Irrigation system installation.
 - 5. Electrical conduit installation.

- B. Related Requirements:
 - 1. Section 01 33 00 - Submittal Procedures
 - 2. Section 01 71 23 - Field Engineering
 - 3. Section 01 78 39 - Project Record Drawings
 - 4. Section 02 41 13 - Site Clearing and Demolition
 - 5. Section 31 20 00 - Earth Moving
 - 6. Section 32 01 90 - Existing Tree Protection and Maintenance
 - 7. Section 32 11 00 - Base Courses
 - 8. Section 32 90 00 - Planting
 - 9. Section 33 11 00 - Domestic Water Utilities
 - 10. Section 33 40 00 - Storm Drainage Utilities

1.02 REFERENCES

- A. State of California, Business and Transportation Agency, Department of Transportation (Caltrans) "Standard Specifications."

1.03 SEQUENCING AND SCHEDULING

- A. Refer to all other Contract Documents, determine the extent and character of related work, and properly coordinate work specified herein with that described elsewhere to produce a complete, operational installation.

1.04 CLOSEOUT SUBMITTALS

- A. Project Record Drawings:
 - 1. Conform to requirements specified in Section 01 78 39 - Project Record Documents.
 - 2. Accurately record locations of utilities remaining, re-routed utilities, new utilities, and newly discovered utilities by horizontal dimensions, elevations, inverts and slope gradients as practical.

1.05 QUALITY ASSURANCE

- A. Control of Work: Comply with Section 5 of the Standard Specifications.

- B. Control of Materials: Comply with Section 6 of the Standard Specifications.

- C. Trench Safety: Comply with applicable portions of Sections 5 and 7 of the Standard Specifications and requirements of OSHA and other agencies having jurisdiction).

1.06 FIELD CONDITIONS

- A. Wet Conditions: No trenching shall occur when excessively wet conditions exist in the opinion of the Owner's Representative.
- B. Dry Conditions: Contractor shall provide dust control in conformance with Section 10 of Standard Specifications and shall provide water to work as necessary to achieve compaction goals.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General: Materials shall be free of debris, roots, wood, scrap material, vegetative matter, refuse, soft unsound particles, or other deleterious and objectionable materials.
- B. Bedding for Utility Piping: Sand conforming to Section 19-3.02F(2) of the Standard Specifications.
- C. Native Backfill: Native backfill shall be acceptable soil material excavated from the project site. This material will be considered unclassified and no testing other than for compaction will be required. Additional material required for backfill shall be acceptable to the Owner's Representative.
- D. Permeable Material: Permeable material shall be Caltrans Class II permeable rock material.
- E. Slurry Fill: Controlled low-strength fluid material (CLSM) consisting of water, Portland cement, aggregate, and fly ash with slump of 10 inches or more and an unconfined compressive strength of 200 psi or less.
- F. Aggregate Base: As specified in Section 32 11 00 - Base Courses.

PART 3 - EXECUTION

3.01 PREPARATION

- A. General:
 - 1. Prior to trenching, the Contractor shall pothole existing utilities at locations indicated or implied on the Drawings, where new piping or utilities will cross existing utilities of uncertain depth to determine the elevation of the utility in question and ensure that the new line will clear the potential obstruction.
 - 2. The Contractor shall mark out construction areas in white with non-permanent paint and contact Underground Service Alert (U.S.A.), 800-642-2444, to locate all known utilities a minimum 48 working hours prior to any excavation.
 - 3. Should an existing crossing utility present an obstruction, the proposed line shall be adjusted as acceptable to the Owner's Representative to clear the existing utility.

3.02 TRENCH EXCAVATION

- A. General:
 - 1. Excavation shall include removal of water and materials that interfere with construction. Remove water which may be encountered in the trench by pumping or other methods prior to pipe laying, bedding and backfill operations. Trenches shall be sufficiently dry to permit proper jointing and compaction.
 - 2. Contractor is responsible for directing vehicular and pedestrian traffic safely through or around the work area at all times.

3. The Contractor shall relocate, replace, reconstruct or repair, to an "as-was" or better condition, surface or subsurface improvements which are in the line of construction or which may be damaged, removed, disrupted or otherwise disturbed by the construction activities. Except as specified in other Sections or shown in the Drawings, this provision applies to all surface improvements of whatever nature such as walls, fences, above-grade utilities, landscaping, paving, structures, or other physical features whether shown in the Drawings or not and to all subsurface improvements such as utilities which may be indicated in the Drawings or marked in the field. The Contractor shall connect modified utilities to existing systems and leave work in an operating condition. The cost of this work shall be considered as included in other items of work and no additional compensation will be allowed.
 4. The maximum allowable trench width at the top of pipe shall be 18 inches greater than the pipe diameter.
 5. New utility trenches extending deeper than 2 feet below finish grade should be located a minimum of 5 feet away from footings and foundations.
- B. Existing Paving Areas:
1. Existing asphalt paving over new trenches shall be sawcut, removed, and legally disposed. Existing asphalt paving shall be neatly sawcut 1 foot greater on each side than the trench width. If a longitudinal pavement joint or edge of pavement is located within 3 feet of the limit of excavation, intervening pavement shall be removed and replaced after completion of backfilling. If curb, gutter, or similar concrete improvement are to be replaced, the adjacent existing asphalt paving shall be sawcut 2 feet from the edge of concrete.
 2. Existing Portland cement concrete paving over new trenches shall be sawcut to a minimum depth of 1-1/2 inches in straight lines either parallel to the curb or at 90-degree angles to the alignment of the sidewalk prior to being broken out. No section to be replaced shall be smaller than 30 inches in either length or width. If the sawcut would fall within 30 inches of a construction joint, expansion joint, or edge, or within 12 inches of a score mark, the concrete shall be removed to the joint, edge, or mark.
- C. Walkway Areas:
1. Backfill for trenches or other excavations within walkway areas should be compacted in 6-inch maximum layers, unless otherwise noted, with hand-held tampers to assure adequate subgrade support.
- D. Compacted Fill Areas:
1. Where trenches are to be excavated in compacted fill, these trenches shall be backfilled with the fill materials excavated and re-compacted in the layers and to the density specified for the particular area.
- E. Open Trench:
1. No trench shall be left in an open un-protected condition at the end of the day. At the end of the day, open trenches shall be protected in a manner acceptable to the Owner's Representative.
 2. Provisions for trench crossings and access shall be made at all street crossings, driveways, water gate valves, and fire hydrants unless otherwise acceptable to the Owner's Representative.
- F. Excavated Material:
1. Excavated material not required for backfill or of value to the Owner shall be removed and legally disposed of by the Contractor at no additional cost.
 2. Material excavated in streets and roadways shall be laid alongside the trench no closer than 2 feet from the trench edge and kept trimmed to minimize inconvenience to public traffic.
 3. Provisions shall be made whereby all storm and waste water can flow uninterrupted in gutters or drainage channels to drainage structures.
 4. Excavated material shall not be stored on existing landscaping or paving without provisions being made to protect the surface below from being stained or otherwise adversely affected.
- G. Shoring

1. Should excavations extend more than 4 feet below existing ground surface, shoring will be required.
2. For trenching greater than 4 feet deep side slopes are not to exceed 1-1/2: 1 with a depth of 20' max.
3. When trenching greater than 4 feet deep, provide a trench box or shield approved by a PE or designed with accompanying tabulated data approved by a PE.
4. Provide shoring, bracing, or underpinning when trenching next to adjoining walls, sidewalks, or pavements. There shall be no trenching below the base or footing of a foundation that can reasonably be expected to pose a hazard to workers unless one of the mentioned support systems is used.
5. Follow OSHA standards for maintaining, installing, and removing support systems.
6. Utility trenches shall be excavated according to accepted engineering practices following OSHA.

3.03 PIPE BEDDING

A. Stabilization of Trench Bottom:

1. When the trench bottom is unstable due to wet or spongy foundation, trench bottom shall be de-watered as necessary. The Owner's Representative will determine the suitability of the trench bottom and the amount of sand, gravel, or crushed rock needed to stabilize the soft foundation.

3.04 TRENCH BACKFILL AND COMPACTION

A. General:

1. Construct backfill in two operations, initial and final.
2. Do not backfill where the foundation material in trench is already saturated, except as acceptable to the Owner's Representative. Provide a minimum cover as shown or specified.
3. Where settling greater than the tolerance allowed for grading occurs in trenches and pits due to unstable subgrade material, excavate to the depth necessary to rectify the problem, then backfill and compact the excavation as specified herein and restore the surface to the required elevation.
4. Place final backfill in 6-inch maximum loose lifts for utilities under roads, streets, concrete slabs or other areas to be paved and synthetic turf subgrade areas.
5. Compact backfill surrounding ducts, conduits, pipes and other structures, including the top 12-inches of subgrade to 95 percent maximum density in accordance with ASTM D1557.
6. Backfill to permit the rolling and compacting of the completed excavation with the adjoining material providing the specified density necessary to enable rock placement of paving of the area immediately after backfilling has been completed.
7. Where trenching occurs at chemically treated subgrade, backfill using a controlled low-strength material (CLSM) slurry as specified.

B. Initial Backfill:

1. Prior to trench backfill, the condition of the trench and laying of pipe shall be acceptable to the Owner's Representative.
2. Select backfill material shall be used as initial backfill for all utilities except irrigation piping, except as otherwise noted and specified.
 - a. After the pipe has been properly laid and accepted by the Owner's Representative, selected backfill material shall be placed on both sides of the pipe and compacted to the depth shown in the Drawings.
 - b. Compaction: The initial backfill material shall be hand tamped in layers not exceeding 4 inches in uncompacted depth and shall be brought up uniformly on both sides of the pipe to avoid bending or distortional stress. After hand-tamping, the relative compaction of the initial backfill material shall be at least 95 percent relative compaction.
3. Where trenching occurs at chemically treated subgrade, backfill using specified controlled low-strength material (CLSM) slurry.
 - a. The mixture shall be placed using chutes, conveyors, buckets, or pumps depending upon accessibility.
 - b. Placed in lifts to prevent piping from floating.

c. Do not vibrate.

C. Final Backfill:

1. Native backfill material shall be used for final backfill, unless otherwise noted.
2. Compaction: Final backfill compaction shall be by mechanical means with backfill material placed in layers not exceeding 6 inches in loose depth. Each layer shall be thoroughly compacted before succeeding layers are placed. The use of machine tampers, except manually held types, shall not be permitted. Final backfill shall be compacted to a relative compaction of 95 percent for paving areas and synthetic turf subgrade areas. In planting areas, provide acceptable topsoil to required depth compacted to 85 percent to 89 percent maximum relative compaction.

D. Jetting: No jetting will be allowed.

3.05 TRENCH SURFACING

A. General:

1. In unimproved areas, the trench surface shall be restored to its original condition. No mounds of earth shall be left along the trench.
2. Backfill shall be flush with adjoining grade in a firm, unyielding position with no visible settling for a period of one year after Final Acceptance.

B. Paved Areas:

1. Temporary surfacing acceptable to the Owner's Representative shall be laid within 1 day after backfilling, except where the Contractor elects to place permanent surfacing within this time period, until permanent paving is installed.

END OF SECTION

SECTION 32 11 00

BASE COURSES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Grading and compaction of subgrade soil for areas to receive pavement, structures, and base material.
 - 2. Furnishing and placing of aggregate base material.
- B. Related Requirements:
 - 1. Section 01 71 23 - Field Engineering
 - 2. Section 31 20 00 - Earth Moving
 - 3. Section 32 12 16 - Asphalt Paving
 - 4. Section 32 13 13 - Concrete Paving

1.02 REFERENCES

- A. State of California, Business and Transportation Agency, Department of Transportation (Caltrans) "Standard Specifications."

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.
- B. Sequencing and Scheduling
 - 1. Work of this Section shall not proceed until all underground utilities and irrigation sleeving have been installed and accepted.
 - 2. Contractor shall schedule work so that installation of paving and surfacing occurs no later than 5 working days after placement and proper compaction of base materials. Base materials left unpaved longer than this time period shall be subject to testing and re-compaction at the contractor's expense.

1.04 ACTION SUBMITTALS

- A. Certificates of compliance, including sieve analyses, for products and materials proposed to be used in work covered by this Section.

1.05 QUALITY ASSURANCE

- A. Control of Work: Conform to Section 5 of the Standard Specifications.
- B. Control of Materials: Conform to Section 6 of the Standard Specifications.

1.06 FIELD CONDITIONS

- A. Wet Conditions: Do not prepare subgrade or place base material when excessively wet conditions exist as determined by the Owner's Representative.

- B. Dry Conditions: Contractor shall provide dust control in conformance with Section 10 of Standard Specifications and shall provide water to subgrades and base courses as necessary to achieve compaction goals.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Materials shall be stockpiled on site in locations that, in the opinion of the contractor, cause least interference with construction operations and as acceptable to the Owner's Representative.
- B. Materials shall not be stockpiled in proposed planting areas.
- C. Protect materials from segregation, contamination and wind and water erosion.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Aggregate Base: Class 2, 3/4-inch maximum material conforming to Section 26-1.02A of the Standard Specifications. No recycled materials will be accepted for synthetic turf or building pad areas. All other paving and surfacing using aggregate base can use recycled materials.

PART 3 - EXECUTION

3.01 SUBGRADE PREPARATION

- A. Preparation of subgrade shall conform to Section 6 of the Standard Specifications and as specified in Section 31 20 00 - Earth Moving.
- B. Remove unsuitable subgrade material as necessary and replace with suitable material or aggregate base per the discretion of the Owner's Representative.

3.02 BASE MATERIAL PLACEMENT

- A. Conform to Section 26 of the Standard Specifications.
- B. Obtain acceptance of subgrade preparation work prior to placing base material thereon.
- C. Place and compact base material in 6-inch maximum lifts unless otherwise noted. Compaction shall be at least 95 percent relative compaction.
- D. Base material shall be moisture conditioned to between optimum and 3 percent above optimum prior to placement and compaction.

3.03 TOLERANCES

- A. Conform to Section 26 of the Standard Specifications, unless more stringent requirements in these Contract Documents are provided, in which place the more stringent tolerances shall govern.

3.04 CLEAN-UP OF WORK AREA

- A. The Contractor shall remove and legally dispose of excess materials, spoils, and debris from the job site on a daily basis.

3.05 PROTECTION OF FINISHED PRODUCT

- A. The Contractor shall provide lighted barricades, signs, and other devices as necessary to prevent damage to finished base courses.

END OF SECTION

SECTION 32 12 16

ASPHALT PAVING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Asphalt paving is shown on the Drawings including, but is not necessarily limited to, the following:
 - 1. Plant-mixed asphalt and other asphalt items.
 - 2. Header boards.
- B. Related Requirements:
 - 1. Section 01 33 00 - Submittal Procedures
 - 2. Section 31 20 00 - Earth Moving
 - 3. Section 32 11 00 - Base Courses
 - 4. Section 32 12 17 - Asphalt Track Paving
 - 5. Section 32 13 13 - Concrete Paving
 - 6. Section 32 33 00 - Site Furnishings
 - 7. Section 33 40 00 - Storm Drainage Utilities

1.02 REFERENCES

- A. State of California, Business and Transportation Agency, Department of Transportation (Caltrans) "Standard Specifications."

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.
- B. Sequencing and Scheduling:
 - 1. Time delay between placement and compaction of base material and installation of asphaltic shall not be more than 5 calendar days. Base material left unpaved longer than this time period shall be subject to testing and re-compaction at the expense of the contractor.

1.04 ACTION SUBMITTALS

- A. Product Data: Descriptive literature for primer and other materials proposed for use if requested by the Owner's Representative.
- B. Certificates, signed by asphaltic producer and Contractor, stating that materials comply with specification requirements. Minimum information submitted shall include a manufacturer's certification for asphalt products and an asphalt mix design by an independent, qualified laboratory.
- C. The Contractor shall furnish vendor's certified test reports for each carload, or equivalent of bituminous material shipped to the project, signed by asphaltic producer and Contractor stating that materials comply with specification requirements.
 - 1. Minimum information submitted shall include a manufacturer's certification for asphalt products and an asphalt mix design by an independent, qualified laboratory.
 - 2. The report shall be submitted and approved before material is used on the Project. The furnishing of the vendor's certified test report for the bituminous material shall not be interpreted as basis for final acceptance.

3. Test reports shall be subject to verification by testing samples of materials received for use on the project.

1.05 CLOSEOUT SUBMITTALS

- A. Warranty as specified.

1.06 QUALITY ASSURANCE

- A. Work shall conform to the appropriate portion of the referenced "Standard Specifications" except references to "measurement" and "payment" are not applicable.
- B. Control of Work: Conform to Section 5 of Standard Specifications.
- C. Control of Materials: Conform to Section 6 of Standard Specifications.
- D. Asphalt paving surfaces shall have positive drainage as indicated on the Drawings.

1.07 PROTECTION OF WORK

- A. Curbs and other work shall be covered with suitable material and protected from staining or injury by equipment and contact with oil, emulsion, and asphalt.
- B. Manholes, catch basins, and other gratings shall be covered with suitable material so that no asphalt or emulsion will come in contact with the inside walls or floors of the structures.
- C. Damage to adjacent improvements shall be repaired or replaced at the Contractor's expense and to satisfaction of the Owner's Representative.

1.08 FIELD CONDITIONS

- A. Grade Control:
 1. Establish and maintain required lines and grades, including crown and cross slope.
 2. The final grades and elevations of the ground paving shall be a consistent depth below adjacent concrete work.
- B. Ambient Conditions:
 1. Apply bituminous prime and tack coats only when ambient temperature in shade is at least 50 degrees F and when temperature has not been below 35 degrees F for 12 hours immediately prior to application.
 2. Do not apply when substrate surface is wet or contains an excess of moisture.
 3. Construct asphaltic surface course only when atmospheric temperature is above 40 degrees F and underlying base is thoroughly dry.

1.09 WARRANTY

- A. Contractor: Provide an extended 2-year warranty for asphalt paving.
 1. Warranty shall be limited to ordinary wear and tear by weather or defects due to faulty materials and workmanship.
 2. Make repairs at no expense to Owner.

PART 2 - PRODUCTS

2.01 DESIGN AND PERFORMANCE REQUIREMENTS

- A. At no point shall paved surface fail to drain. Provide drainage as indicated on the Drawings.
- B. Asphalt paving shall be free from excessive segregation defined as gaps between aggregate visible at 3/16 inch or larger, cracking, potholes, raveling, slippage, depressions, corrugations, or other defects at the date of completion and acceptance of the project.
- C. Unless otherwise noted, aggregates in asphalt mix may be a blend of virgin material and reclaimed asphalt paving (RAP), with the RAP constituting no more than 15% of the aggregate blend per Section 39 of the Standard Specifications.
- D. Asphalt mix for use beneath track surfacing, tennis court surfacing, or other court system to receive surface coating shall consist of only virgin material; RAP shall not be used.

2.02 ASPHALT PAVING

- A. Paving Asphalt Binder: Shall be PG 64-10, conforming to Section 92 of the Standard Specifications.
- B. Prime Coat: Liquid asphalt to conform to the requirements for SS-1 liquid asphalt as per Section 94 of the Standard Specifications and approved by the Owner's Representative.
- C. Tack Coat: Asphaltic emulsion to be penetration type conforming to the RS-1 SS-1 requirements of Section 94 of the Standard Specifications.
- D. Aggregates:
 - 1. Traffic Areas (Vehicular Asphalt Paving): 1/2-inch medium in accordance with the gradation requirements of Section 39 of the Standard Specifications, unless otherwise specified or noted. Traffic area aggregate shall be used in parking and street areas.
 - 2. Pedestrian and Non-Vehicular Areas: 3/8 inch maximum or No. 4 maximum aggregate in accordance with the gradation requirements of Section 39 of the Standard Specifications, unless otherwise specified or noted.

2.03 HEADERS

- A. Refer to details on the Drawings.

2.04 AGGREGATE BASE

- A. Aggregate base shall conform to Section 32 11 00 - Base Courses.

2.05 EQUIPMENT

- A. Spreading and rolling equipment shall be in accordance with Section 39-5 of the Standard Specifications and additional requirements specified.
- B. Spreading and compaction shall be in accordance with Section 39-6 of the Standard Specifications and additional requirements specified.
- C. Pavers that leave ridges, indentations or other marks in the surface that cannot be eliminated by rolling or prevented by adjustment in operation shall not be used.

PART 3 - EXECUTION

3.01 EDGE BAND AND WOOD HEADER INSTALLATION

- A. Install to conform to shapes, lines, dimensions, and grades shown on the Drawings.
- B. Radii shall be smooth and constant with properly aligned tangent points.

3.02 PAVING INSTALLATION - GENERAL

- A. Conform to requirements of Sections 37 and 39 of the Standard Specifications.
- B. Place plastic materials under asphaltic paving equipment while not in use, to catch and/or contain drips and leaks.
- C. Areas shall be paved in sequence and direction to avoid driving loaded trucks on the new asphalt surface.

3.03 PREPARATION – PRIME COAT

- A. Apply primer in accordance with Standard Specifications Section 39 on aggregate base.
- B. Immediately before applying the prime coat, loose dirt and other objectionable material shall be removed from the full width of the surface to be primed.
- C. The bituminous material including solvent shall be uniformly applied with a bituminous distributor at the rate of 0.25 to 0.50 gallon per square yard depending on the base course surface texture. The type of bituminous material and application rate shall be approved by the Owner's Representative prior to application.
- D. Following the application, the primed surface shall be allowed to dry not less than 24 hours without being disturbed or for such additional time as may be necessary to permit the drying out of the prime coat until it will not be picked up by traffic or equipment. This period shall be determined by the Owner's Representative. The surface shall then be maintained by the Contractor until the surfacing has been placed.
- E. Suitable precautions shall be taken by the Contractor to protect the primed surface against damage during this interval, including supplying and spreading sand necessary to absorb excess bituminous material.

3.04 PREPARATION – TACK COAT

- A. General: Apply tack coat to contact surfaces of adjacent pavement and concrete curbs.
- B. Immediately before applying the tack coat, the full width of surface to be treated shall be swept with a power broom and/or air blast to remove all loose dirt and other objectionable material.
 - 1. Vegetation shall be removed and an approved herbicide applied to those areas before cleaning.
 - 2. Emulsified asphalt shall be diluted by the addition of water when directed by the Owner's Representative and shall be applied a sufficient time in advance of the paver to ensure that all water has evaporated before the overlying mixture is placed on the tacked surface.
 - 3. The bituminous material including vehicle or solvent shall be uniformly applied with a bituminous distributor at the rate of 0.05 to 0.07 gallons per square yard. The type of bituminous material and application rate shall be approved by the Owner's Representative prior to application.

- C. Following the application, the surface shall be allowed to cure without being disturbed. The curing period shall be not less than 24 hours, unless otherwise approved by the Owner's Representative, and shall be sufficient to permit drying out and setting of the tack coat.
- D. After tack coat has cured, suitable precautions shall be taken by the Contractor to protect the surface against damage prior to placement of next course.

3.05 PLACING ASPHALT PAVEMENT

- A. General:
 - 1. Place asphalt within 48 hours of applying primer or tack coat and after required curing time for emulsions.
 - 2. Each course of asphalt concrete shall be installed or constructed in accordance with the Standard Specifications Section 39.
 - 3. All layers, except as otherwise provided in these Specifications, shall be spread with mechanical spreading and finishing equipment as provided for in the Standard Specifications Section 39-5.01.
- B. Tack and Levelling Course:
 - 1. After completion of the base course a tack coat shall be applied and a leveling course of minimum 1-inch thickness shall be placed and compacted over entire area.
 - 2. After compacting, the surface of the leveling course shall be check for compliance with the specified tolerances.
 - 3. Where required, depressions shall be filled with asphalt concrete fines prior to proceeding with subsequent pavement construction.
- C. Paver Equipment Requirements:
 - 1. Asphalt pavers shall be self-propelled mechanical spreading and finishing equipment provided with a screed or strike-off assembly capable of distributing the material to not less than the full width of a traffic lane.
 - a. Screed action shall include cutting, crowding, and other practical action which is effective on the mixture without tearing, shoving, or gouging, and which produces a surface texture of uniform appearance.
 - b. The screed shall be adjustable to the required section and thickness. The paver shall be provided with a full width roller or tamper or other suitable compacting devices.
 - 2. Asphalt pavers shall be operated to insure continuous and uniform movement of the paver.
 - 3. The asphalt paver shall operate independently of the vehicle being unloaded or shall be capable of propelling the vehicle being unloaded in a satisfactory manner and, if necessary, the load of the haul vehicle shall be limited to that which will insure satisfactory spreading.
 - 4. While being unloaded, the haul vehicle shall be in contact with the machine at all times, and the brakes on the haul vehicle shall not be depended upon to maintain contact between the vehicle and the machine.
- D. Placing Hot-Mix Asphalt:
 - 1. The completed mixture shall be deposited at a uniform quantity per linear foot to provide the required compacted thickness without resorting to spotting, picking-up or otherwise shifting the mixture.
 - a. Segregation shall be avoided, and the surfacing shall be free from pockets of coarse or fine material.
 - b. Asphalt containing hardened lumps shall not be used.
 - 2. Unless lower temperatures are directed by the Owner's Representative, mixtures shall be spread, and the first coverage of initial or breakdown compaction shall be performed, when the temperature of the mixture is not less than 275 degrees F. Breakdown compaction shall be completed before the temperature of the mixture drops below 250 degrees F.
 - a. A layer shall not be placed over another layer that exceeds 2 inches in compacted thickness until the temperature of the layer that exceeds 2 inches in compacted thickness is less than 150 degrees F at mid depth.

- b. Layer thickness shall not be less than 1.25 inches or exceed 2 inches unless approved in advance and in writing by Owner's Representative.
- E. Construction Joints: Before placing the top layer adjacent to cold transverse construction joints, the cold transverse construction joints shall be trimmed to a vertical face and to neat line.
- 1. Transverse joints shall be tested with a 16-foot straightedge and shall be cut back to conform to meet the specified tolerances.
 - 2. Connections to existing surfacing shall be feathered to conform to the requirements for smoothness.
 - 3. Longitudinal joints shall be trimmed to a vertical face and to a neat line if the edges of the previously laid surfacing are, in the opinion of the Owner's Representative, in such condition that the quality of the completed joint will be affected.
- F. Rollers and Roller Equipment: The Contractor shall furnish a sufficient number of rollers to achieve the compaction and surface finish required by these Specifications.
- 1. Each roller shall have a separate operator.
 - 2. Rolling equipment shall be self-propelled and reversible.
 - 3. Rollers shall be equipped with pads and water systems that prevent sticking of asphalt mixtures to the pneumatic- or steel-tired wheels.
 - 4. A parting agent that will not damage the asphalt mixture, as determined by the Owner's Representative, may be used to aid in preventing the sticking of the mixture to the wheels.
- G. Compaction:
- 1. Compact pavement by rolling to specified relative compaction but not less than 96 percent of bulk unit weight tested in accordance with the nuclear gauge or CTM 308 core method.
 - a. Do not displace or extrude pavement from position.
 - b. Hand compact in areas inaccessible to rolling equipment.
 - c. A "pass" shall be one movement of a roller in either direction.
 - d. A "coverage" shall be as many passes as are necessary to cover the entire width being paved.
 - e. Overlap between passes during a coverage, made to ensure compaction without displacement of material in accordance with good rolling practice, shall be considered to be part of the coverage being made and not part of a subsequent coverage.
 - f. Each coverage shall be completed before subsequent coverages are started.
 - g. Rolling shall commence at the lower edge and shall progress toward the highest portion.
 - h. Perform rolling with consecutive passes to achieve even and smooth finish without roller marks.
 - 2. Asphalt concrete shall be compacted to a relative compaction of not less than 96 percent and shall be finished to the lines, grades, and section shown on the Drawings.
 - a. In-place density of asphalt concrete will be determined prior to opening the pavement to public use.
 - b. Relative compaction will be determined by California Test 375.
 - c. Laboratory specimens will be compacted in conformance with California Test 304.
- H. The completed surfacing shall be thoroughly compacted, smooth, and free from routes, humps, depressions, or irregularities. Ridges, indentations, or other objectionable marks left in the surface of the asphalt paving by blading or other equipment shall be eliminated by rolling or other means. The use of any equipment that leaves ridges, indentations, or other objectionable marks in the asphalt paving shall be discontinued, and other acceptable equipment shall be furnished by the Contractor.

3.06 TOLERANCES

- A. Surface Tolerance:
- 1. The Contractor shall have on site a 12-foot straightedge for testing the asphalt paving surface when said straightedge is laid on the finished surface and parallel with the center line, the surface shall not vary more than 0.01-foot from the lower edge of the straightedge.
 - 2. The transverse slope of the finished surface shall be uniform to a degree that no depressions greater than 0.02-foot are present when tested with a straightedge 12 feet long.

3. Skin patching will not be allowed to correct depressions.

B. Thickness Tolerance:

1. The pavement thickness shall be determined by measuring the average thickness of core samples taken from the pavement for density determination.
2. Thickness will be determined from the cores and shall be based upon the average of the cores.
3. The asphalt thickness indicated on the cross sections shall be maintained.
4. Thickness deficiencies in excess of 3/8-inch shall be corrected by removal and replacement of overlay at the discretion of the Owner's Representative.
5. Skin patches and overlays less than 1-1/2 inches will not be allowed.

C. Adjustments to Contract Sum:

1. The Contract will be reduced for thickness deficiencies equal to or less than 3/8-inch in proportion to 2 times the percent of thickness deficiencies to the specified pavement thickness (i.e., a 1/4-inch thickness deficiency in a pavement with a 2-inch specified thickness would result in a reduction of the unit price of $(2 \times 0.25)/2.0 = 25$ percent) for the lot containing a thickness deficiency.
2. No Contract Sum adjustment will be made for thickness in excess of those specified or shown.

3.07 FIELD QUALITY CONTROL

A. Take samples and perform tests in accordance with Caltrans Test Methods.

B. Upon completion of the work, Contractor shall provide a water drainage test for paved areas.

1. Areas that fail to drain properly, as determined by the Owner's Representative, shall be corrected and repaired at no additional cost.
2. If repaired, the entire surface shall have a seal coat applied at Contractor's cost.
 - a. Type of seal coat will be determined by the Owner's Representative.
 - b. Repairs shall be made within 15 calendar days of notification at the expense of the Contractor.

C. Contractor to install asphalt to be flush with top of new fence curb. Asphalt mix shall completely fill voids along outside edge of tennis court surfacing.

3.08 PROTECTION

A. After final rolling, do not permit vehicular traffic on pavement until it has cooled to not less than temperature noted in the "Standard Specifications" and hardened and in no case sooner than 6 hours.

B. Contractor shall be responsible for erecting barricades to protect paving from traffic until mixture has cooled and attained its maximum degree of hardness.

C. Ample time shall be allowed for drying before traffic, vehicular and pedestrian, is allowed on the pavement.

END OF SECTION

SECTION 32 13 13

CONCRETE PAVING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Concrete flatwork as shown on the Drawings including, but is not necessarily limited to, the following
 1. Curbs.
 2. Mowbands and edge bands.
 3. Walkways.
 4. Expansion and control joints.
 5. Reinforcement.
 6. Finishing.

- B. Related Requirements:
 1. Section 01 33 00 - Submittal Procedures
 2. Section 01 71 23 - Field Engineering
 3. Section 32 12 16 - Asphalt Paving
 4. Section 31 20 00 - Earth Moving
 5. Section 32 11 00 - Base Courses
 6. Section 32 32 15 - Landscape Concrete; foundations and formed concrete for planters, seat walls, and other site improvements as shown.
 7. Section 32 33 00 - Site Furnishings

1.02 REFERENCES

- A. State of California, Business and Transportation Agency, Department of Transportation (Caltrans) "Standard Specifications."

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.

- B. Pre-Installation Meeting: Conduct meeting at Project site to review scope of concrete paving work and expectations.
 1. Meeting shall be scheduled after approval of mockups and sufficiently in advance of commencement of concrete paving.
 2. Attendees shall include:
 - a. Contractor.
 - b. Concrete subcontractor.
 - c. Owner's Representatives.

1.04 ACTION SUBMITTALS

- A. Product Data: Manufacturers' current catalog cuts and specifications for the following:
 1. Expansion joint filler materials.
 2. Color admixtures.
 3. Curing compounds.
 4. Other items as requested by Owner's Representative.

- B. Samples:
 - 1. Concrete materials as required for testing and inspection.
 - 2. Expansion Joint Sealant: Manufacturer's standard bead samples showing full range of colors available.
 - 3. Concrete Panels: Not less than 12 inches by 12 inches for each selected color and finish texture using concrete mix proposed for this Project.
 - a. Indicate materials and methods used to produce each color and texture.
 - b. Mockup work shall not commence until a concrete sample panels have been approved.
- C. Concrete Mix Design: Submit mix designs and certified compressive strength test reports for each concrete strength, type, additives, and maximum aggregate size required, prepared, and certified by the ready-mix concrete supplier.

1.05 INFORMATIONAL SUBMITTALS

- A. Statement of installer/finisher qualifications if requested by Owner's Representative.
- B. Mill Certificates and Certifications for reinforcing bars, if used.
- C. Delivery tickets for each load of concrete delivered to the site.
- D. Results of slip-resistance testing.

1.06 QUALITY ASSURANCE

- A. Construction of concrete flatwork, including curbs and gutters, shall conform to Section 73 of the Standard Specifications.
- B. Codes and Standards: Comply with the applicable provisions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified:
 - 1. California Building Code, Title 24, Part 2, Chapter 19A - Concrete
 - 2. ACI 301 Specifications for Structural Concrete for Buildings
 - 3. ACI 318 Building Code Requirements for Reinforced Concrete
 - 4. ACI 614 Recommended Practice for Measuring, Mixing, and Placing Concrete
 - 5. Concrete Reinforcing Steel Institute, Manual of Standard Practice
- C. Contractor shall be responsible for quality of concrete in place and shall bear burden of proof that concrete as placed meets minimum requirements.
- D. Slip Resistance: Floor tile shall provide a value equal to or greater than 0.42 when tested in accordance under dry conditions with DCOF AcuTest procedure contained in ANSI A137.1:2012, Section 9.6, and under wet conditions with DCOF AcuTest procedure of ANSI B101.3.
- E. Concrete Testing:
 - 1. The Owner may retain, at its expense, a testing laboratory to perform material evaluation tests in accordance with Section 01 45 00 - Quality Control.
 - 2. Testing may include slump tests and securing samples of concrete, cement, aggregates, or other materials for testing. Applicable materials shall be provided by the Contractor at no additional cost to the Owner.
- F. When review or observation is required of the Owner's Representative of the concrete work, Contractor shall notify the Owner's Representative not less than 2 working days prior to date when the review or observation is required.
- G. Pre-Pouring Review:

1. Formwork, joint patterns, base material, reinforcement, “dobies,” ties, and other installation accessories shall be reviewed and accepted by the Owner’s Representative prior to pouring concrete.
 2. Forms, reinforcing, and accessories shall be in place and Contractor shall give a minimum of 5 working day lead-time notice to Owner’s Representative when scheduling the review request.
 3. Contractor shall allow a minimum of 2 working days after pre-pour review in Construction Schedule for possible modifications to concrete preparation work, at no cost or delay to the project.
- H. The Owner’s Representative shall have access to any off-site batch plant or quarry supplying materials at all times for subject project and trucks in route to the project site.
- I. Mockups:
1. General:
 - a. Mix design shall match that used on accepted sample panels and proposed for use in final construction including cement and color additive.
 - b. Prepare at least one month before start of final concrete work to allow concrete to cure before observation.
 - c. Concrete color and finish for mockup appearance shall match color and finish of accepted sample.
 - d. Build mockups at the location indicated or, if not indicated, as selected by the Owner’s Representative
 - e. Notify Owner’s Representative 5 working days in advance of dates and times when mockups will be constructed and layouts will be ready for review.
 - f. Color and texture shall be approved before starting construction.
 - g. Perform specified slip-resistance testing on mockups.
 - h. Maintain final accepted mockups in an undisturbed condition as a standard for judging the completed Work.
 - i. Retain samples of sands, aggregates, and color additive used in the mockups for comparison with materials used in final work.
 - j. Demolish and remove mockups when directed if not incorporated into the final work.
 2. Flat Paving Mockups:
 - a. 4-foot x 4-foot sample panels of colored concrete flatwork and concrete darkening agent for each required color and texture shall be poured by the Contractor at the site for review and acceptance by the Owner’s Representative.
 - b. Quantity:
 - 1) Contractor shall allow for preparation of up to 2 flat paving mockups for evaluation and final approval of each concrete.
 - c. Samples shall include each type and profile of joint, surface texture, and tooled conditions for approval. Contractor shall schedule review well in advance of concrete operations to allow for modifications and preparing an additional mockup panel if necessary.

1.07 DELIVERY AND STORAGE

- A. Deliver concrete reinforcement to job site properly tagged and ready to set. Store above ground surface on platforms, skids, or other supports. Coordinate delivery and storage of all other materials as appropriate.
- B. Coordinate delivery so that mixes may be immediately poured upon arrival at site.

1.08 FIELD CONDITIONS

- A. Maintain control of concrete dust and water. Do not permit adjacent areas to be contaminated.

PART 2 - PRODUCTS

2.01 BASE MATERIALS

- A. Aggregate: As specified in Section 32 11 00 - Base Courses.

2.02 FORMS

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.
 - 1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less.
 - 2. Do not use notched and bent forms.
- B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.03 REINFORCING

- A. General:
 - 1. Reinforcing steel shall be cut and bent cold to exact lengths and shapes to comply with Drawings, reviewed shop drawings, and referenced codes and standards.
 - 2. Comply with the additional requirement shown on the Drawings.
- B. Welded Wire Mesh (WWM): 6 x 6 #10, unless noted otherwise in the Drawings, conforming to ASTM A185. Wire mesh shall be "chaired" up with 2-inch x 2-inch x 2-inch concrete blocks to ensure uniform embedment into concrete section to dimension as shown in the Drawings.
- C. Reinforcing Steel: Deformed billet steel bars complying with Section 52-1.02B of Standard Specifications, Section 1907 of CBC and ASTM A615.
 - 1. Provide Grade 60 for No. 4 and larger, Grade 40 for No. 3 and smaller.
 - 2. Bars shall be in a new, "first-class" condition.
- D. Smooth Dowel Steel Bars for Expansion Joints: ASTM A29, Grade 40, No. 3 smooth.
 - 1. Dowels shall be shop painted with iron-oxide zinc-chromate primer.
 - 2. Where shown, provide metal dowel sleeve or other approved break-bond method at one end of dowel to permit lateral movement at dowel within concrete section.
 - 3. Provide for movement which equals joint width plus 1/2 inch.
 - 4. Bars shall be in a new, "first-class" condition.
- E. Dowel Insert System: Single component dowel sleeve with self-locking design; Greenstreak "Speed Dowel" by Sika, or equal selected for dowel profile and diameter indicated on the Drawings.
- F. Tie Wire: ASTM A82, black annealed, minimum 16 gage.
- G. Supports for Reinforcement: Provide bolsters, chairs, spacers, and other devices for spacing, support and fastening reinforcing bars and welded wire fabric in place. Use wire bar type supports complying with CRSI specifications, unless otherwise acceptable.

2.04 CONCRETE MATERIALS

- A. Cement: ASTM C150, Type II, and shall be provided by one manufacturer.
- B. Pozzolan: Class F Fly Ash per ASTM C618 comprising 15-20% of total cementitious materials. Fly Ash may be added to a maximum ratio of 35% of total cementitious materials where testing reports are provided for the mix design review.

- C. Coarse Aggregates: Coarse aggregates shall conform to ASTM C33, sizes 57, 67 or 7. Pea gravel aggregate shall not be used.
- D. Fine aggregates: Fine Aggregates shall conform to ASTM C33.
- E. Water: Clean and not detrimental to concrete.

2.05 CONCRETE ADDITIVES

- A. Pigment for Concrete: Synthetic mineral-oxide pigments or colored water-reducing admixtures, color stable, nonfading, and resistant to lime and other alkalis, and complying with ASTM C979; Davis Colors Inc., 800-800-6856, as specified and noted on the Drawings, or equal.
 - 1. If added to mix at Project site, additive shall be furnished in manufacturer's "Mix-Ready" disintegrating bags.
 - 2. Dosage Rate: As required to achieve color of approved sample but not exceeding 10 percent of weight of cementitious materials in mix.
 - 3. Colors:
 - a. Darkening Agent: Davis Colors Inc. colorant #8084 Black, or acceptable equal.
 - 1) Dosage: 1/4-pound per sack of concrete.
 - b. Other Colors: As noted on the Drawings.
- B. Fiber Reinforcement: 100 percent virgin homopolymer polypropylene fibrillated fibers; "Fibermesh 300" by Propex Concrete Systems Corp., or equal.
- C. No admixtures shall be allowed without written acceptance by the Engineer of Record. Admixtures that have a negative impact on concrete finish shall not be used. When more than one admixture is used, admixtures shall be compatible.

2.06 ACCESSORIES

- A. Non-Shrink Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 2,400 psi in 48 hours and 7,000 psi in 28 days. SIKAGrout 212 or equal.
- B. Curing Materials:
 - 1. Liquid Curing Compounds: ASTM C309, Type 1.
 - 2. Sheet Material: Waterproofed Kraft paper, ASTM C17, regular type.
- C. Joint primer: One component, solvent based; Sonneborn horizontal paving joint primer No. 733, or No. 766, or equal.
- D. Fiber Expansion Joint Material: Preformed cellular fiber complying with ASTM D1751; 1/2 inch thick unless otherwise indicated.
 - 1. Expansion joint material shall be variety with "zip-strip" H-channel joint sealant receptacles. If proposed joint material is not installed with sealant receptacles then, the expansion joint material shall be completely covered with a Sonneborn "Sonofoam" closed cell backer rod or acceptable equal prior to application of joint sealant.
 - 2. Provide 3/8-inch tooled edges each side of joint material. Refer to Drawings for additional information.
- E. Paving Expansion Joint Sealant: One-part, self-leveling polyurethane conforming to ASTM C920, Class 25, Type S, Grade P; Sonneborn "Sonolastic SL 2," or equal.
 - 1. Color: As selected by Owner's Representative.

2.07 CONCRETE MIXING

A. General:

1. Mix and deliver concrete in accordance with ASTM C94.
2. Addition of water to the mix after leaving the plant is not permitted.
3. No admixtures will be allowed without prior acceptance by the Owner's Representative. If accepted, use admixtures according to manufacturer's written instructions.
4. Ensure equipment and plant will afford accurate weighing, minimize segregation, and will efficiently handle materials.
5. Deposit concrete into final position within 90 minutes of introduction of cement.

B. Pigments:

1. Darkening Agent: Add 1/4 pound of specified black colorant per 94 lb. sack of cement to all concrete which will be exposed to view when cured except for drain rims and concrete receiving other colorants.
2. Other Colors: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.

C. Minimum ultimate compression strength of concrete at 28 days is as follows:

Item	Strength	Maximum slump	Size of aggregate	Cement (# of 94 lb. sacks per yard)	W/C Ratio
Slab-On-Grade	3,000	4"	3/4"-1"	5	0.50
Curbs / Edgebands	3,000	4"	3/4"-1"	5	0.60

D. Drying Shrinkage Limit at 21 Days: 0.40 percent.

E. Adjustment to Concrete Mixes:

1. Mix design adjustments may be requested by Contractor when job conditions, weather, test results warrant, or to meet appearance of accepted samples or mockup.
2. Test data for revised mix design shall be submitted to and accepted by Owner's Representative before using in work.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify requirements for concrete cover over reinforcement.
- B. Verify that anchors, seats, plates, reinforcement, and other items to be cast into concrete are accurately placed, positioned securely, and will not cause hardship in placing concrete.

3.02 PREPARATION

- A. Prepare joints in previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.
- B. Coordinate the placement of joint devices with erection of concrete formwork and placement of form accessories.

3.03 EXCAVATION

- A. In addition to the general grading excavation required, the Contractor shall excavate to the required depths in the locations shown for flatwork and curbs. Excess excavation shall be replaced with concrete poured monolithically with the wall or pavement, at no additional cost to the Owner.

3.04 INSTALLATION OF FORMWORK

- A. Formwork shall conform to Section 51 of the Standard Specifications and as follows:
 - 1. The Contractor shall build forms with a high degree of care and shall select from materials of adequate strength and smoothness to produce smooth, even surfaces of uniform texture and appearance, free of bulges, depressions, or other imperfections per the discretion of the Owner's Representative. Remove any residue remaining on concrete after forms are removed.
 - 2. Transition of curves to straight lines and of curves to curves shall be formed as smooth, continuous, and uninterrupted with typical 90-degree radius alignment at the points of tangency.

3.05 PLACING REINFORCEMENT

- A. General:
 - 1. When there has been a delay in placing concrete, reinforcement shall be inspected and, if necessary, cleaned, relocated, and tied at no additional cost to Owner.
 - 2. Wherever conduits, piping, inserts, sleeves, and similar item interfere with placing of reinforcing steel, obtain approval of Owner's Representative of method of procedure before concrete is placed.
- B. Reinforcement installation shall conform to the provisions of the Standard Specifications as follows:
 - 1. Cleaning Section 52-1.03B
 - 2. Bending Section 52-1.03C
 - 3. Placing Section 52-1.03D
 - 4. Splicing Section 52-6
 - 5. Lapped Splices Section 52-6.03B

3.06 PLACING CONCRETE

- A. Place concrete in accordance with ACI 301.
- B. Notify Engineer of Record and Special Inspector minimum 48 hours prior to commencement of operations. Do not place concrete until forms and reinforcements, as well as other required inspections, have occurred and the Special Inspector is present to perform observations and testing during placement.
- C. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints are not disturbed during concrete placement.
- D. Separate slabs on grade from vertical surfaces with 1/2-inch-thick joint filler. Place joint filler to required elevations. Secure to resist movement by wet concrete.
- E. Extend joint filler from bottom of slab to within 1/8 inch of finished slab surface.
- F. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- G. Place concrete continuously between predetermined contraction joints.
- H. Do not interrupt successive placement; do not permit cold joints to occur.

- I. Screed slabs on grades shown, maintaining surface to tolerance of 1/4 inch maximum in 10 feet.

3.07 CONCRETE JOINTS

- A. General:
 - 1. Joints shall be constructed as detailed in the Drawings.
 - 2. Refer to layouts on the Drawings for location of each joint type.
- B. Expansion Joints: Install to full depth of slab.
 - 1. Fiber Expansion Joints: After allowing concrete to fully cure, remove zip strips and install expansion joint sealant as shown and in accordance with manufacturer's instructions.
 - 2. Install specified dowel sleeves in accordance with manufacturer's instructions and as shown.
- C. Score Joints: Tool to a 3/8-inch radius and to a 1-inch depth.
- D. Form contraction joints as detailed on plans. Joints shall be formed immediately after final finishing with an approved concrete-sawing machine; "SOFF-Cut" as manufactured by SOFF-Cut International: Corona, California (909) 272-2330, or equal.
 - 1. Avoid dislodging aggregates.
 - 2. Unless otherwise indicated or directed, the joints shall be 1/8-inch-wide and 1-inch deep. Do not use zip-strips.
 - 3. Saw contraction joints to true alignment with "SOFF-Cut" concrete-sawing machines adequate in number and power and with sufficient replacement blades to complete the sawing at the required rate.
 - 4. Joints shall be cut as the concrete has hardened sufficiently to permit walking on the slab, and as recommended by the saw manufacturer.
 - 5. Unless otherwise approved, saw joints in the sequence of concrete placement. Remove cutting debris.
 - 6. Saw cuts shall be made in accordance with manufacturer's instructions.
- E. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
 - 1. Cut depth shall be 25 percent of slab depth unless otherwise shown or required to comply with accepted mockup.
 - 2. Layout: As shown on the Drawings.
- F. Curb and Edge Band Joint: Locate as follows, unless otherwise noted on the Drawings.
 - 1. Every 5 feet for score joints.
 - 2. Install fiber expansion joints maximum 15 feet on center.
 - 3. Install fiber expansion joints at corners, and beginnings and endings of radii.
 - 4. Align score and fiber expansion joints with proposed fence posts.

3.08 EDGING

- A. Edges of slabs, curbs, and other paving shall be tooled with a 1/2-inch radius edging tool, unless otherwise indicated or specified in the Drawings.
- B. Trowel marks resulting from tooling of edges shall be carefully troweled out.

3.09 PLACING OF CONCRETE

- A. Notify Owner's Representative minimum 5 working days prior to pour.
- B. Preparation:

1. Protect finished surfaces adjacent to areas to receive concrete.
2. Valve boxes, electric boxes, drainage inlet structures, manholes, lids, and other similar items shall be covered and protected prior to and during concrete pour. Concrete staining to these items will not be accepted.
3. Verify that the Owner's Representative, if required, has inspected reinforcement.
4. Notify the Owner's testing laboratory at least 2 working days before placing concrete.

C. Placing:

1. Concrete placement shall conform to Section 40-103H of the Standard Specifications.
2. Moisten earth, and spray forms and reinforcement with water before placing concrete.
3. Place concrete in continuous operation to permit proper and thorough integration and to complete scheduled placement.

- D. Concrete shall not be dropped freely where reinforcing bars will cause segregation, nor shall it be dropped freely more than six feet. Spouts, elephant trunks, or other acceptable means shall be used to prevent segregation.

3.10 CONCRETE FINISHING - GENERAL

- A. Provide formed concrete surfaces to be left exposed with a medium sand-blast finish. Coordinate with Landscape Architect prior to placing concrete.
- B. Finish concrete floor surfaces in accordance with ACI 301. Provide non-slip surface where concrete floor surfaces are left exposed, unless noted otherwise.
- C. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains as indicated on drawings.

3.11 FLATWORK FINISHING

A. General:

1. Provide each concrete finish where shown in the Drawings.
2. Provide samples and mockups as specified of all concrete finishes for review and acceptance prior to pouring concrete.

- B. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats.

- C. Trowel Finish: After applying float finish, apply first trowel finish and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighen until surface is free of trowel marks and uniform in texture and appearance.

D. Broom Finish:

1. Broom with medium bristled broom to a uniformly roughened surface. Finished surface shall be clean with uniform and straight lines.
2. Paving with a slope greater than 6 percent shall be heavy broom finish and paving less than 6 percent shall be a medium broom finish.

E. Areas to Receive Surface Retarder:

1. Apply specified surface retarder uniformly to wet concrete after the initial bleed water rises to the surface using low pressure spray equipment in accordance with manufacturer's recommendations.
2. Remove retarded cement matrix with water.
3. Exercise care, and install protective procedures, to prevent rinse water from damaging adjacent materials or entering adjacent soil and planting areas. Should rinse water contaminate soil of planting areas, affected soil shall be removed and replaced with new soil complying with Section 32 90 00 - Planting at no additional cost to Owner.

3.12 FIELD QUALITY CONTROL

- A. Provide free access to Work and cooperate with Owner's Representatives.
- B. Tests of cement and aggregates may be performed to ensure conformance with specified requirements.
- C. One additional test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete it represents.
- D. At a minimum one slump test will be taken for each set of test cylinders taken.
- E. Tolerances:
 - 1. Vertical deviation from specified grades shall not exceed 0.04 foot.
 - 2. Surface smoothness deviations shall not exceed 1/8 inch in 8 feet, in any direction.
 - 3. Thickness shall not be more than 0.01 foot less than planned thickness at any point.

3.13 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- C. Cure floor surfaces in accordance with ACI 308.
- D. Spraying: Spray water over floor slab areas and maintain wet for 7 days.
- E. Provide necessary security to protect the concrete from vandalism. Concrete which is defaced or damaged during the course of this Contract shall be replaced by the Contractor at no additional cost to the Owner.

3.14 PATCHING

- A. Allow Engineer to inspect concrete surfaces immediately upon removal of forms.
- B. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Engineer upon discovery.
- C. Patch imperfections in accordance with ACI 301.

3.15 DEFECTIVE CONCRETE

- A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances, or specified requirements; concrete with excessive honeycombs or other surface or finish defects.
- B. Repair or replacement of defective concrete will be determined by the Engineer of Record.
- C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Engineer for each individual area.
- D. No additional compensation will be allowed for repair of defective concrete.

3.16 CLEANING

- A. Remove excess base material, concrete spills, cement stains and all other excess materials from all project areas prior to Final Acceptance.

END OF SECTION

SECTION 32 17 23
PAVEMENT MARKINGS

PART 1 - GENERAL

1.01 SUMMARY

- A. Furnish all labor, materials, equipment, facilities, transportation and services to complete all striping and related work shown on the Drawings and/or specified herein.
- B. Scope of Work: The general extent of the striping work is shown on the Drawings and can include, but is not necessarily limited to the following:
 - 1. Curb painting
 - 2. Accessible seating symbols
- C. Related sections can include, but may not be limited to the following:
 - 1. Section 32 12 16 – Asphalt Paving
 - 2. Section 32 13 13 – Concrete Paving

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. State of California Department of Transportation Standard Specifications, current edition.

1.03 SUBMITTALS

- A. Conform to requirements of Section 01 33 00 Submittals and/or applicable Division One and Division Two specifications, General Conditions and Special Provisions.

1.04 PROJECT/SITE CONDITIONS

- A. Work shall not be performed during wet, or other adverse conditions as determined by the Owner's Representative and/or paint manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Unless otherwise specified, all striping shall be two coats of solvent borne, rapid dry paint (of the colors indicated in the Drawings) in conformance with Section 84 of the Standard Specifications.
- B. Colors shall be as follows:
 - 1. Accessible seating – blue.
 - 2. No parking and emergency access – red.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Contractor shall make provisions and take all necessary precautions to protect existing improvements and surrounding property from overspray or damage due to pavement marking work.
- B. Contractor shall layout all striping (with chalk-lines or other acceptable method) prior to start of work for review and acceptance by the Owner's Representative. Adjust layout as directed by the Owner's Representative.

3.02 APPLICATION

- A. No striping shall be installed until the pavement surface has fully cured and/or has been properly stripped, cleaned and prepped per the paint manufacturers' instructions.
- B. Paint shall be applied at rates approximately as follows:
 - 1. First Coat: 360 square feet per gallon of paint
 - 2. Second Coat: 150 square feet per gallon of paint

3.03 PROTECTION

- A. The contractor shall provide appropriate barriers, warning signs, and/or other acceptable arrangements to protect all painted surfaces until project Final Acceptance.

END OF SECTION

SECTION 32 18 00

MISCELLANEOUS PAVING AND SURFACING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Miscellaneous paving surfacing as shown on the Drawings including, but is not limited to, the following:
 - 1. Sand for bunkers.
 - 2. Infield fines mix.
 - 3. Infield clay mix; bag and brick material.
- B. Related Requirements:
 - 1. Section 32 33 00 - Site Furnishings
 - 2. Section 31 20 00 - Earth Moving
 - 3. Section 32 11 00 - Base Courses

1.02 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action and Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.
- B. Sequencing and Scheduling:
 - 1. Coordinate applicable subgrade preparations, installations of base course materials, and all other work with work of this Section to insure a proper, timely installation.

1.03 ACTION SUBMITTALS

- A. Samples:
 - 1. Unless otherwise specified, submit 1-quart size samples of the following:
 - a. Infield fines mixture.
 - b. Infield clay mixture.

1.04 QUALITY ASSURANCE

- A. Materials Source: Sources of materials specified herein shall not be changed during course of work without review and written acceptance by the Owner's Representative.

1.05 WARRANTY

- A. Manufacturers: Provide Owner with the following manufacturers extended warranties.

PART 2 - PRODUCTS

2.01 SAND AND CLAY MATERIALS

- A. Suppliers:
 - 1. Sand: TMT Enterprises, Inc., San Jose, CA, 408-432-9040 as specified and the basis of design unless otherwise noted, or equal. Contact: Matt Moore.
 - 2. Fines and Clay: Ewing Irrigation and Landscape Supply, Sacramento, CA 916-383-2400 as specified and the basis of design unless otherwise noted, or equal. Contact: Jim Barbuto.

- B. Sand for bunkers: shall have a backfill with one of the following general characteristics:
1. USGA Root Zone Sand,

- a. 65 percent USGA Root Zone sand conforming to the following sieve range:

Sieve Size	USGA Spec
	Individual % Retained
#4 (4.75mm)	0
#10 (2mm)	0-10% Combined
#18 (1mm)	
#35 (0.5mm)	Minimum 60% Combined
#60 (.25mm)	
#100 (.15mm)	20% Maximum
#140 (.1mm)	5% Maximum Combined
#270 (.05mm)	
Silt (.05-.002mm)	5% Maximum
Clay (<.002mm)	3% Maximum

- b. 15 percent Coconut Coir Fiber.
 - c. 15 percent AXIS Calcined Diatomaceous Earth.
 - d. 5 percent Worm Castings.
2. Supplier: 'Terra Vida French Drain Backfill Mix' by TMT Enterprises. Contact: Matt Moore 408-432-9040

C. Infield Fines and Clay Mix

1. Mix shall be free of rocks, debris, vegetation, clay balls, foreign materials, etc. Infield mixes shall be sterilized to eliminate the possibility of any growth of vegetation.
2. Infield Fines: "DuraEdge Infield Fines" by DuraEdge Products, Inc. or equal.
 - a. The composition of the mix shall be achieved using mechanical blending equipment prior to delivery to the site and shall be as follows:
 - 1) Total sand content shall be 70-75 percent.
 - 2) The combined amount of sand retained on the medium, coarse and very coarse sieves shall be greater than or equal to 50 percent.
 - 3) The combined amount of silt and clay shall be 25-30 percent.
 - 4) The ratio of silt divided by clay, otherwise known as the SCR, shall be 0.5 – 1.0.
 - 5) No particles greater than 3 millimeters.
 - 6) Equal to or less than 5 percent of particles shall be retained on the 2 millimeter.
3. Warning Track: "DuraTrax CO Lava Warning Track" by DuraEdge Products, Inc. or equal.
 - a. Warning Track shall be clean, crushed red lava rock resulting in a mix that is red in color, having a yield of approximately 0.9 tons per cubic yard and possessing the following particle size analysis:

Sieve Size	Range of % Passing
3/8"	100
No. 4	90-100

Sieve Size	Range of % Passing
No. 8	60-80
No. 16	45-60
No. 30	30-50
No. 50	20-35
No. 100	10-25
No. 200	5-15

- b. Material meeting this specification would be DuraTrax Colorado Lava Warning Track as manufactured by DuraEdge Products, Inc. 866-867-0052, or an approved equal.

- 4. Pitchers' Mound Mix: 100 percent, high-density pure virgin clay; "DuraPitch ProLoc Block" by DuraEdge Products, Inc. or equal.
 - a. Color: Reddish Brown
 - b. Pitching mound and batter's box clay is pre-compressed clay blocks that are reddish brown in color and possessing the following particle size analysis:
 - 1) Total sand content shall be less than 15 percent.
 - 2) The overall clay/silt content shall be greater than 85 percent.

- 5. Home Plate and Bases Clay: 100 percent pure virgin clay blocks; "DuraPitch ProLoc Block" by DuraEdge Products, Inc. or equal.
 - a. Color: Reddish Brown
 - b. Pitching mound and batter's box clay is pre-compressed clay blocks that are reddish brown in color and possessing the following particle size analysis:
 - 1) Total sand content shall be less than 15 percent.
 - 2) The overall clay/silt content shall be greater than 85 percent.

- 6. Bases Clay: "TMT Pro-Grade Screened Clay."

- D. Sports Field Conditioner: ProSlide Calcined Clay Conditioner as supplied by DuraEdge Products Inc., or equal.

2.02 ADDITIONAL MATERIALS

- A. Aggregate Base: As specified in Section 32 11 00 - Base Courses.

PART 3 - EXECUTION

3.01 SAND

- A. Spread sand to depth specified on Drawings.
- B. Rake then roll sand with water roller to establish firm, even surface at specified elevation.

3.02 INFIELD CLAY MIX AT HOME PLATE AND BASES

- A. Home Plate: Excavate evenly designated infield areas and lay a 1/2-inch course of loose clay and compact. Lay clay bricks across entire area and alternate brick joints in courses. Bricks to be worked together to bond and hand tamp. Apply 1/2-inch layer of loose clay to cover and finish with fines layer.

- B. Bases: Excavate evenly designated infield areas and lay loose clay in 2-inch lifts and compact. Lay additional clay lifts to achieve 4 inches of clay and compact.
- C. Water lightly and compact with 1,000 to 3,000-pound roller.
- D. Spread additional material, roll and compact to establish even finished grade at specified elevation.

3.03 INFIELD FINES AND WARNING TRACK MIX

- A. Spread infield fines mix evenly where shown in drawings and screed in 2-inch lifts. Thoroughly water each lift until the entire depth is moist.
- B. Roto-till specified sports field conditioner into the top 3 inches of fines at a rate of 1.0 ton per 1000 square feet.
- C. Compact with a 1,000 to 3,000-pound roller after grading and wetting final lift.
- D. Allow material to dry, then spike and mat drag to establish finish grade at specified elevations.
- E. Water to settle.
- F. Finish grade of infield and warning track fines shall be flush with concrete edgebands. If edge condition is a tall curb set finish grade to finish grade established on the grading Drawings.

3.04 SPORTS FIELD CONDITIONER

- A. As specified for infield fines mix.

3.05 AGGREGATE BASE

- A. Install as shown on the Drawings and in accordance with Section 32 11 00 – Base Courses.

3.06 PITCHER'S MOUND MIX

- A. Apply the pitchers' mound clay mix at 2-inch lifts, tamp, compact, and repeat.
- B. Compact with a 1,000 to 3,000-pound roller after grading and wetting final lift.
- C. Fill in back and sides of sloping to the edge of the circle.

3.07 TOLERANCES

- A. Vertical deviation from specified lines, grades, and detail cross sections shall not exceed 0.04 foot for all surfacing specified in this Section.

END OF SECTION

SECTION 32 18 13

SYNTHETIC TURF - GOLF

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Included: Synthetic grass playing field system consisting of, but not necessarily be limited to, the following:
 - 1. Synthetic grass system consisting of putting green, fringe and 2nd cut.
 - 2. A resilient infill system consisting of anti-microbial treated sand.
- B. Related Requirements:
 - 1. Section 32 18 14 - Synthetic Turf Base

1.02 REFERENCES

- A. ASTM Standard Test Methods:
 - 1. D1335: "Standard Test Method for Tuft Bind of Pile Yarn Floor Coverings."
 - 2. D5848: "Standard Test Method for Mass Per Unit Area of Pile Yarn Floor Covering."
 - 3. F355: "Standard Test Method for Shock-Absorbing Properties of Playing Surfaces."

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action and Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.

1.04 ACTION SUBMITTALS

- A. Submit Drawings: Prepare and submit the following.
 - 1. Seaming plan.
 - 2. Installation details; edge detail, utility box detail, and other conditions of the installation.
 - 3. Field layout and striping plan including field colors, including field line layouts and colors.
 - 4. Final electronic versions of artwork.
- B. Samples:
 - 1. Turf, 4" x 4" in size, illustrating details of finished product.
 - 2. Loose samples, 1-foot square, of the turf backing and tufted fibers.
 - 3. One-quart samples of the following:
 - a. Specified primary infill.

1.05 INFORMATIONAL SUBMITTALS

- A. Manufacturer's installation instructions.
- B. Certifications:
 - 1. Project specific letter from turf manufacturer on the company letterhead certifying that the products to be provided meet or exceed all specified requirements, and state that the installer meets the specified qualifications above and is certified by the manufacturer to install the synthetic turf specified and to be provided.
- C. Certified copies from an independent third-party laboratory reports for results of the following tests:
 - 1. Pile Height, face width & total fabric weight, ASTM D5848.

2. Primary and secondary backing weights, ASTM D5848.
 3. Tuft bind, ASTM D1335.
 4. Grab tear strength, ASTM D5034.
 5. Water permeability, ASTM D1551.
 6. Flame resistance, ASTM F1551.
 7. Tuft yarn tensile strength and elongation, ASTM D2256.
- D. Copy of the manufacturers' minimum 5-year, prepaid, non-prorated, third-party insured warranty and insurance policy information.
- E. Qualifications: A list providing project name, date the field installation was approved, contact names and telephone numbers for each project that meets the experience and qualification requirements specified.

1.06 CLOSEOUT SUBMITTALS

- A. The Contractor shall provide the following prior to Final Acceptance and the Owner filing the Project Notice of Completion:
1. Written warranty as specified with forms completed in Owner's name and registered with manufacturer and insurance carrier.
 2. Information confirming that the third-party insurance policy, non-cancelable and pre-paid, is in effect covering this installation, and underwritten by a Best "A" Rated Insurance Carrier. Insurance carrier shall confirm that the policy is in force and premiums paid.
 3. Three copies of Maintenance Manuals, which will include all necessary instructions for the proper care and preventive maintenance of the turf system, including painting and markings.
 4. Project Record Documents, in accordance with Section 01 78 39 – Project Record Documents with plans showing actual locations of seams and other pertinent information.

1.07 QUALITY ASSURANCE

- A. The manufacturer shall have a representative on site to certify the installation and warranty compliance.
- B. Quality Assurance Testing: Prior to shipment of the synthetic turf and components to the job site, the synthetic turf rolls should be randomly sampled and tested by the manufacturer who will certify that they meet the specification.
1. Testing shall be conducted and may include pile composition, pile weight, total weight, pile height, tuft bind, and grab/tear strength.
 2. Test results of the relevant characteristics and certification turf meets or exceeds the specified requirements shall be submitted as specified.

1.08 TURF COMPANY QUALIFICATIONS

- A. The Turf company shall be experienced in both the manufacturing and installation of the specified type of synthetic infilled turf system.
1. Use of outside, independent contractors for the installation is to be reviewed by the Owner's Representative prior to the Bid of Contract.
 2. The Turf Company shall identify and provide the name of a single point of contact for their company for this project beginning with the bid process through construction administration and project close-out.
 3. The Turf Company shall coordinate all bid documents, submittals, shop drawings, schedules, warranty and close-out efforts internally and shall not rely on Owner's Representative to coordinate with multiple parties. Failure to do so could result in a time and materials charge from the Owner or Owner's Representative for additional coordination.
 4. For the purpose of meeting these qualifications, the type of fiber and infill sand are not determining factors in meeting these installation qualifications.

- B. Installer:
1. Capable of providing competent workers skilled in this specific type of in-filled synthetic grass installation.
 2. Designated supervisory personnel on the project shall be certified as competent in the installation of this material including sewing seams and proper installation of the infill mixture.
 3. The foreman for the installation shall have installed at least 20 fields in the last 3 years of the specified material.
 4. Possess an active California D-12 Synthetic Products license in good standing and have never had a license revoked.
 5. Shall not have had a Surety or Bonding Company finish work on any contract within the last 5 years.
 6. Shall not have been disqualified or barred from performing work for any public owner or other contracting entity in the U.S.
 7. For the purpose of meeting these qualifications, the type of sand are not determining factors in meeting these installation qualifications.

1.09 FIELD CONDITIONS

- A. Contractor shall be responsible for reviewing the base and ensuring it conforms to the project requirements prior to placement of the synthetic turf.
- B. Playing field subgrade preparation shall be completed and accepted by the Owner Representative prior to commencement of Work under this Section.
- C. Ambient Conditions: Care should be taken during installation to account for rapid fluctuations in temperature to avoid expansion and contraction which can affect the final installation. Temperature extremes shall be carefully monitored. The carpet should never be rolled or unrolled when frozen, which can cause cracking and irreparable damage to the secondary backing.

1.10 WARRANTY

- A. Manufacturer: Provide Owner with turf manufacturer's warranty which guarantees the usability and playability of the synthetic turf system for its intended uses for a minimum 5 year period. The warranty coverage shall not be prorated nor limited to the amount of the usage. The warranty submitted must have the following characteristics:
1. A non-prorated, non-cancellable up-front pre-paid, third-party insured warranty. Warranty shall be covered by a third party insurance policy, non-cancelable and pre-paid, and is in effect covering this installation, and underwritten by a Best "A" Rated (or better) Insurance Carrier listed in the A.M. Best Key Rating Guide.
 2. Insurance carrier shall confirm that the policy is in force and premiums prepaid for entire warranty duration in full.
 3. The policy shall include a minimum annual aggregate of \$5,000,000 per year and be based on claims arising from fields installed and completed only during the policy year.
 4. The policy shall provide full coverage for a minimum of 5 years from the date of Notice of Completion.
 5. The policy shall cover all costs associated with full field replacement with new equal or better turf material, including labor, materials and any other costs to repair or replace the field.
 6. Owner shall not be responsible for any deductible.
 7. Warranty shall have no restrictions on amount of use provided type of use is in accordance with the approved warranty language.
 8. Shall warrant materials and workmanship, and that the materials installed meet or exceed the product specifications, including general wear and damage caused from UV degradation.
 9. Shall have a provision to either make a cash refund or repair or replace such portions of the installed materials that are no longer serviceable to maintain a serviceable and playable surface.
 10. Shall be a warranty from a single source covering workmanship and all self-manufactured or procured materials.

11. Guarantee the availability of replacement material for the synthetic turf system installed for the full warranty period.
12. The name on the warranty shall be made out to Owner.

PART 2 - PRODUCTS

2.01 DESIGN AND PERFORMANCE CRITERIA

A. General:

1. Synthetic turf construction and components shall be non-toxic and not cause commonly known allergic reactions. Each synthetic turf system should be constructed to provide dimensional stability and resist damage from wear and tear during athletic and recreational usage.
2. System shall be permeable by design with adequate perforations through all of the backing coatings. Putting greens shall be non-porous and have lateral sheeting.
3. The bonding or fastening of system material components shall provide a permanent, tight, secure, and hazard-free athletic playing surface.
4. Seams shall be glued using Mapei 2K.

B. Product Specifications:

1. Tru-Roll Putting Green: combination of ridged monofilament polyethylene fibers
2. and texturized monofilament fibers, tufted into a fibrous, non-perforated, porous backing, and measuring not less than 5/8 inches high.
 - a. The low friction fiber shall be 5,000 denier, low friction, and treated with UV inhibitors.
 - b. Fibers shall have been extruded individually through a spinnerette, stretched and twisted.
 - c. Low friction fiber shall be specifically designed to virtually eliminate abrasion.
3. The tufted fiber weight shall not be less than 54 ounces per square yard. The low friction fiber shall be custom blended polyethylene, treated with UV inhibitors.
4. The maximum gauge of the tufted fiber rows shall be 3/16 inch.
5. Backing: Not less than 2 components consisting of a primary and secondary backing system of woven polypropylene or urethane.
 - a. Backing system shall be a double-layered polyurethane fabric..
 - b. The backing shall consist of scrape coat polyurethane to permanently lock the fiber tufts
 - c. in place.
 - d. The backing weight of all backing material shall be a minimum of 23 ounces per square yard.
6. The minimum tuft binding tensile strength shall be 8 pounds without infill, as determined by ASTM D1335.

- #### C.
- The synthetic turf shall be delivered in 15-foot wide rolls and of sufficient length to extend from sideline to sideline. Head seams, between the sidelines, will not be acceptable.

2.02 INFILL SYNTHETIC TURF

- #### A. Manufacturer and System:
- Tru-Roll Putting Green as specified and the basis of design has been pre-approved by the Owner.

2.03 MATERIALS

- #### A. Synthetic Turf Infill system shall consist of two components, a Primary and Secondary Infill:

1. Primary Infill: Sand shall consist of 30-50 mesh anti-microbial treated sand. Coarse jagged sand will not be accepted. Camofill or envirofill.

Sieves (US Mesh Size)	% Retained
16	0
25	10-30
30	30-50
35	15-35
40	5-15
50	<5
70	<1

2. At the end of installation, and prior to acceptance, the top of the infill shall be not less than a uniform 1/4 inch depth below the top of fibers. If additional infill is required to meet with requirement, it shall be furnished and installed by the Turf Company at no additional charge.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify the base, as specified in Section 32 18 14 – Synthetic Turf Base, has been installed and approved by Owner’s Representative and turf manufacturer.
- B. Use a 2-5-ton static roller or other acceptable compactor to repair and properly compact any disturbed areas of the prepared base.
- C. Do not proceed with installation of turf until unacceptable base conditions have been corrected.

3.02 INSTALLING THE SYNTHETIC TURF

- A. The installation shall be performed in full compliance with the reviewed and accepted product submittal.
- B. Only trained technicians, skilled in the installation of athletic caliber synthetic turf systems working under the direct supervision of the approved installer’s supervisor, shall undertake cutting, sewing, gluing, shearing, topdressing or brushing operations.
- C. Strictly adhere to the installation procedures specified. Variance from these requirements shall be submitted to and accepted in writing, by the manufacturer’s onsite representative, and submitted to the Owner, verifying that the changes do not, in any way, affect the warranty.
- D. The turf manufacturer and installation subcontractor shall inspect and accept the field base, and provide documentation to that effect, prior to the installation of the synthetic grass system. The surface must be perfectly clean as installation commences and shall be maintained in that condition throughout the process.
- E. The turf rolls are to be installed directly over the properly installed manufactured base material.
 1. No equipment with loads greater than 35 pounds per square inch shall be allowed on the field. Contractor is responsible for altering operations in order to adhere to this requirement. Contract shall use roller to tighten infill and get fibers rolled over.
 2. Contractor and synthetic turf installer shall strictly adhere to the written instructions provided by the manufactured base manufacturer for installing turf on top of their product.
 3. Contractor is responsible to assure vehicles being used on the manufactured base are equipped with pneumatic (air-filled) tires, preferably turf tires, designed to spread loads and minimize damage to

- surface. Foam filled or solid tires and tires with aggressive lug patterns shall not be used on the manufactured base without synthetic turf installed.
4. Use of an A-frame for unrolling of the synthetic turf as recommended by the base manufacturer.
- F. The turf rolls shall be installed directly over the properly prepared base. Extreme care shall be taken to avoid disturbing the base, both in regard to compaction and planarity.
- G. The full width rolls shall be laid out across the width of the field.
- H. Connections of the perimeter synthetic turf edges shall be completed as shown on the Drawings:
1. Connection to the recycled plastic header boards shall be done with industrial staples. Minimum embedment depth of fasteners shall be 1 inch with spacing a maximum 2 inches on center.
- I. The infill materials shall be installed to fill the voids between the fibers and allow the fibers to remain vertical and non-directional.
1. Apply in thin lifts to depth specified. The turf shall be brushed as the mixture is applied.
 2. The mix shall be uniform and even in thickness to assure proper playing characteristics.
 3. The infill shall be placed with a void of 1/4 inch to the top of the fibers.

3.03 FIELD QUALITY CONTROL

- A. After completion of the synthetic turf installation, and prior to Substantial Completion of the project, the Contractor shall have installation tested for shock absorptency.
1. Site testing shall be at ambient shaded air temperature of 40–100 degrees F.
 2. Field test measurements shall be made at a minimum of 3 locations and shall avoid areas where 2 seams cross.
 3. Testing shall be made, at the Contractor's expense, by an independent testing laboratory accredited for such tests and pre-approved by the Owner.
 4. Testing and analysis by the testing laboratory shall provide the necessary data to the Owner that verifies the finished field does not exceed shock attenuation of 160 as determined by the ASTM F355A and F1936 test procedures.
- B. Test results that do not meet the specified shock attenuation, or if any one test value is 10 percent greater in variance than the specified values, then the Contractor's field installer shall address the failed test area, be required to retest the entire field as stated above, and conform to these requirements prior to acceptance by the Owner.
- C. The Contractor shall provide the following prior to Final Acceptance and the Owner filing the Project Notice of Completion:
1. Written warranty as specified with forms completed in Owner's name and registered with manufacturer and insurance carrier.
 2. Information confirming that the third-party insurance policy, non-cancelable and pre-paid, is in effect covering this installation, and underwritten by a Best "A" Rated Insurance Carrier. Insurance carrier shall confirm that the policy is in force and premiums paid.
 3. Three copies of Maintenance Manuals, which will include all necessary instructions for the proper care and preventive maintenance of the turf system, including painting and markings.
 4. Project Record Documents, in accordance with Section 01 78 39 with plans showing actual locations of seams and other pertinent information.

3.04 DEMONSTRATION AND TRAINING:

- A. Upon completion of the field installation, Contractor shall have a supervisory person provide a minimum 3-hour field training seminar with the Owner's personnel on how to care for the field.

- B. At a minimum, seminar shall include a demonstration of how use of the sweeper and groomer, how to care for the field with the groomer and sweeper, review the entire provided maintenance manual including the proper procedure for removal of gum and other debris, and answer any questions.

3.05 MAINTENANCE

- A. Manufacturer shall be responsible for the testing of the G-max levels of the installed synthetic turf at the completion of years 2, 4, 6, and 6 months prior to the completion of year eight of the warranty period.
- B. Testing shall be completed by an independent testing laboratory accredited for such tests and shall be pre-approved by the Owner. Testing and analysis of findings shall be completed by testing laboratory's qualified persons utilizing the required techniques outlined in the ASTM F355 test standard.
- C. If tests results indicated turf playing field does not fall within the G-max range specified, the manufacturer will be required under terms of its warranty to modify the field composition to the sole satisfaction of the Owner so that it falls within the target G-max range. A failed test shall be retested to verify that the field meets the specifications.
- D. Costs associated with testing and corrective work shall be at no cost to the Owner.

3.06 MAINTENANCE CONTRACT

- A. If the proposed regular maintenance contract cost for the duration of the warranty is selected by the District, the Turf contractor shall provide one maintenance service visit per year for the first year of the 5 year warranty, then semi-annual visits (i.e. twice a year) for the remaining years of the warranty period. Each maintenance service visit shall include the following:
 - 1. One (1) Turf Contractor grooming session including:
 - a. A general sweeping to remove foreign objects such as dirt, leaves, bird droppings, chewing gum and other debris that may collect on the field surface.
 - b. A deep groom sweep and rejuvenation to de-compact infill and in an effort to maintain appropriate G-Max levels, as well as clean the infill from deleterious matter contaminating the infill material.
 - c. All accumulated debris and contaminating material shall be off-hauled and disposed of in a legal manner by the Turf Company.
 - 2. Overall analysis and inspection of the field and its applicable systems, including fiber wear analysis, ultraviolet degradation, infill depth and consistency, infill migration, field edging attachments, sewn and glued seams, line verification and field inserts (inlays).
 - 3. Minor repairs (sewing/adhesive failures, inlay separation, and general workmanship) as needed, of items found relating to the synthetic surface.

END OF SECTION

SECTION 32 18 14

SYNTHETIC TURF BASE

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Base for the synthetic turf consisting of, but is necessarily limited to, the following:
 - 1. Vertical draining, porous stone aggregate base consisting of a uniform single stone base.
 - 2. Stone aggregate base for stability and leveling purposes, and substrate for porous drainage composite.
 - 3. Manufactured porous drainage composite.
- B. Related Requirements:
 - 1. Section 01 78 29 – Conformance Survey
 - 2. Section 31 20 00 – Earth Moving
 - 3. Section 31 23 00 – Excavation and Fill
 - 4. Section 32 18 13 – Synthetic Turf Playing Field

1.02 REFERENCES

- A. California Building Code (CBC):
 - 1. Chapter 33 – Site Work, Demolition, and Construction.
- B. American Society for Testing and Materials (ASTM):
 - 1. D 1557: "Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort."
 - 2. ASTM F2898-11: "Standard Test Method for Permeability of Synthetic Turf Sports Field Base Stone and Surface System by Non-confined Area Flood Test Method"
 - 3. ASTM D2434: "Standard Test Method for Permeability of Granular Soils (Constant Head)."
 - 4. ASTM C88: "Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate."
- C. California Occupational Safety and Health Standards (OSHA):
 - 1. Article 6 - Excavations and Shoring.
- D. State of California, Business and Transportation Agency, Department of Transportation (Caltrans) "Standard Specifications."

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures:
 - 1. Action and Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.
 - 2. Closeout Submittals shall be submitted in accordance with Section 01 78 39 - Project Record Documents.

1.04 ACTION SUBMITTALS

- A. Product Data: Manufacturer's descriptive literature for pipe accessories, filter fabric, and porous drainage composite as applicable.

- B. Samples: Two 1-quart samples of each rock material and additional samples of each rock material to the Owner's testing agent as specified under Article "Material Testing," and Two 1-quart samples of Subdrain Trench Leveling Rock, as required.

1.05 INFORMATIONAL SUBMITTALS

- A. Manufacturer's installation instructions.
- B. Certification: Certification signed by Contractor and drainage system Installer that installed materials conform to specified requirements and system was successfully checked and tested prior to covering with engineered permeable rock base, trench drain rock, and/or subdrain trench leveling rock.

1.06 CLOSEOUT SUBMITTALS

- A. Project Record Drawings.

1.07 QUALITY ASSURANCE

- A. Control of Work: Conform to Section 5 of the Standard Specifications.
- B. Control of Materials: Conform to Section 6 of the Standard Specifications.
- C. Single-Source Responsibility: Crushed stone shall come from only one supplier.
- D. Material delivered to the site not meeting the Specifications will be rejected by the Owner. Material rejected by the Owner shall be removed from the site at the Contractor's expense.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Prior to trucking of material to project sites, crushed rock shall be washed so it is clean of impurities and fines created during rock crushing operations.
- B. Store products to be installed as part of the field base neatly and orderly, stacked and blocked to prevent damage and contamination.

1.09 FIELD CONDITIONS

- A. Protection of Project Site: Make provisions, and take the necessary precautions, for protect existing and completed work from damage during turf installation.
- B. Contractor shall be responsible for stabilizing top of subgrade elevations for the synthetic turf areas prior to receiving the stone aggregate base and for executing fine grading as may be necessary or incidental to placement of the synthetic turf.
- C. Contractor shall prevent surface water and subsurface or groundwater from flowing into excavations and flooding area to receive turf base. Contractor shall not allow water to accumulate in excavations. Contractor shall remove water to prevent softening of sub grades.

1.10 MATERIAL TESTING

- A. General:
 - 1. The Owner will employ and pay for the services of an Independent Testing Agency as specified in Section 01 45 00 - Quality Control.
 - 2. Payment for initial material testing is the responsibility of the Owner.

3. Employment by the Owner of the Testing Agency shall in no way relieve Contractor's obligations to perform the Work of the Contract.
 4. The Owner reserves the right to change its testing laboratory if the need arises.
 5. Cost of testing which are repeated on materials that have failed to meet specifications or are as a result of shortages shall be borne by the Contractor.
 6. The Contractor shall include the following with its sample submittals:
 - a. Identification of proposed source and supplier.
 - b. Current lab mechanical analysis of the proposed stone using ASTM standards for sieve analysis.
 - c. Sample sizes as specified.
 - d. Certification that the supplier can deliver the total quantity of material needed to complete the project in a timely manner.
- B. Pre-Construction Testing Procedures: The following tests will be performed by the Owner's Testing Agent prior to acceptance of rock provided under this Section. Testing of proposed Engineered Permeable Base Rock and Subgrade Trench Drain Rock will be performed in the following steps:
1. Engineered Permeable Base Rock and Subgrade Trench Drain Rock:
 - a. Contractor shall submit a 5-gallon separate composite to the Owner's Testing Agency, unless the Owner's Testing Agent elects to pull the sample directly at the quarry and/or requests test samples of varying quantities based on the testing labs' needs, for each porous base rock material. The Owner's testing agent will evaluate these materials as specified using ASTM C136 and ASTM D75 testing protocol as a guideline.
 - b. The submitted samples will be used for comparison with all subsequent samples submitted for acceptance during construction.
 - c. Material shall not be delivered to the project site until tests show it complies with the accepted material.
 - d. All rock to be provided for an Engineered Permeable Rock Base is required to pass the following qualifications:

Restrictions:

To ensure structural stability: $D_{60}/D_{10} > 5$ and $1 < \frac{D_{20}^2}{D_{10} * D_{60}} < 3$
Fragmentation shall be 100%.

"x" is the size of the sieve (in millimeters) that lets pass "x" percent of the stone. For example, D₆₀ is the size of the sieve that lets 60 percent of the stone pass. For calculation purposes, these sizes may be obtained by interpolation on a semi-log graph of the sieve analysis.

To ensure proper drainage: Porosity of Engineered Permeable Rock Base > 25%
(when stone is saturated and compacted to 92% Modified Proctor)

Permeability of stone base > 30 in/hr (Tested thru ASTM D2434 with rock saturated and compacted to 92% Modified Proctor)

Depending on the type of rock present in the crushed stone mix, other mechanical characteristics might be necessary for approval.

- e. Engineered Permeable Rock Base and Subdrain Trench Drain Rock shall be tested to show that both materials meet the following stability requirements:

Test Method	Criteria
LA Abrasion (California Test 211)	Not to exceed 35
Durability Index (California Test 229)	Not less than 40

Test Method	Criteria
Sulfate Soundness (ASTM C-88)	Not to exceed 12% loss for coarse aggregate, 10% for fine aggregate (based on a sulfate solution)

C. Testing During Construction:

1. During construction, samples will be taken and analyzed periodically by the Owner's representative/Testing Agent to assure strict compliance with the Specifications. The Owner may sample and test the rock material either at the source or at the project site upon delivery from incoming transfer trucks. Frequency of sampling for gradation testing would be to sample every 500 tons of Engineered Permeable Base Rock delivered to the site. Rock not meeting Specifications will be rejected by the Owner's representative. Materials rejected by the Owner's representative shall be removed from the site at the Contractor's expense. It is the Contractor's responsibility to ensure that all permeable stone for the synthetic turf base meet the above requirements throughout the installation process, including transfer and delivery to the site, placement, spreading, compaction, and installation of synthetic turf material. Proper investigation into rock sources may be required by the Contractor to ensure that the rock that was bid will meet the project specifications.
2. Subdrain Trench Leveling Rock: The leveling rock shall comply with section 2.04 A and be submitted to the Owner's Testing Agent for gradation testing. No additional tests are required for the leveling stone.

D. Permeability of placed engineered permeable rock base shall not be less than 10 in/hr (Tested per ASTM F2898-11)

E. If rock stability to water and vehicles is in question, the Owner has the option to perform additional testing to ensure material shall adhere to requirements of Caltrans Section 68.

1.11 PROJECT RECORD DOCUMENTS

- A. Accurately record location of pipe runs, connections, cleanouts and invert elevations. Include locations of utilities remaining, re-routed utilities, new utilities, and newly discovered utilities as applicable by horizontal dimensions, elevations, inverts, and slope gradients.

1.12 POROUS CLOSED-CELL COMPOSITE GUARANTY

- A. The manufacturer of the porous closed cell composite base shall provide a guaranty, in writing, that for a period of twenty five (25) years, the porous closed cell composite base shall be a part of a turf system that will not exceed a field average G-max of 120 g's as tested according to the ASTM 1936 Standard Specification.

PART 2 - MATERIALS

2.01 DESIGN AND PERFORMANCE CRITERIA

- A. The finished crushed stone or aggregate base supplied shall be stable, unyielding, and permeable.

2.02 ENGINEERED PERMEABLE ROCK BASE

- A. Engineered Permeable Rock Base: Virgin, un-recycled, crushed stone meeting the gradation criteria for the California Department of Transportation 3/4-inch Permeable Class II (Section 68) and the following gradation.

Mesh size	Percent Passing
1"	100
3/4"	90-100
3/8"	40-100
#4	25-40
#8	18-33
#30	5-15
#50	0-7
#200	0-3

- B. The above rock gradation range is a general recipe for the Contractor to use in order to meet the product performance requirements of the built stone base. The Contractor is responsible for ensuring that the type of rock and blend they submit and install will meet all the specified requirements, including those outlined in item 1.10 of this specification section.
- C. Soft rock materials, including sandstone, limestone, and shale, are not suitable. Rock supplier shall certify that all supplied rock will be void of this type of rock.

2.03 SUBDRAIN TRENCH DRAIN ROCK

- A. Shall be 3/4-inch x 1/2-inch crushed virgin, un-recycled, washed rock, meeting the following general gradation requirements:

Sieve Size	Percent Passing
1"	100
3/4"	90-100
1/2"	10-40
3/8"	0-15
#4	0-5

- B. The rock profile will extend from the bottom of the trench to the top of both sides of the subdrain trench, and to the top of rock elevation. The Engineered Permeable Base Rock shall not be installed over the subdrain trench drain rock.
- A. The Contractor is responsible for ensuring the type of rock and blend they submit and install will meet all the specified requirements, including those outlined in item 1.10 of this specification section.
- B. Soft rock materials, including sandstone, limestone, and shale, are not suitable. Rock supplier shall certify that all supplied rock will be void of this type of rock.

2.04 SUBDRAIN TRENCH LEVELING ROCK

- A. For planarity purposes, a clean uniform 3/8-inch crushed stone material, of the same source as the subdrain trench drain rock or Engineered Permeable Rock Base may be installed over the subdrain trench profile upon approval of Owner's representative. Maximum thickness for this stone layer is 1 inch.

2.05 MANUFACTURED BASE MATERIAL

- A. Manufactured Porous Closed Cell Composite Base: Resilient, interlocking, polypropylene panels specifically engineered for sports fields; “PowerBase YSR” by Brock International, 303-544-5800, or equal.
1. Panel Size: Approximately 73.5 x 49.0 inches.
 2. Thickness: 1.0 inches, (25 mm).
 3. Weight: 5.56 lbs per panel

2.06 GEOTEXTILE FILTER FABRIC

- A. Geotextile Filter Fabric: Mirafi 140 N, or accepted equal, conforming to the following minimum specifications, unless otherwise recommended by the Geotechnical Engineer:

Property	Test Method	Typical Values
Grab Strength	ASTM D 4632	80 lb.
Puncture Strength	ASTM D 4833	25 lb.
Burst Strength	ASTM D 3786	130 lb.
Trapezoid Tear	ASTM D 4533	25 lb.
Permeability	ASTM D 4491	0.1 cm/sec
Apparent Opening Size	ASTM D 4751	#50 Sieve size
Permittivity	ASTM D 4491	

2.07 DRAINAGE ELEMENTS

- A. Refer to Storm Drainage Specification Section for in-field drainage elements.

PART 3 - EXECUTION

3.01 SUBGRADE PREPARATION

- A. Contractor shall verify that subgrade has been prepared according to specification Section 31 20 00 – Earth Moving with regard to compaction, grade tolerances in accordance with Section 01 71 23 – Field Engineering and is free of debris, non-compactable material, topsoil, or organics prior to beginning work.
- B. Top of subgrade elevations shall be verified using laser-operation survey instruments. Refer to Conformance Surveying specifications for requirements.
- C. Once the subgrade conformance has been accepted and compaction has been properly achieved, the geotextile filter fabric shall be installed over the compacted and prepared subgrade, as shown on the plans, without disturbing grades.
- D. Geotextile fabric shall be installed with 6” overlap and stapled 6’ on-center along seams. Staples to be 6” staples.

3.02 INSTALLATION OF THE SUBDRAIN TRENCH AND IN-FIELD DRAINAGE

- A. Contractor to install drain rock and piping in strict compliance with the manufacturer's written instructions and as indicated in the Drawings. Contractor to exercise caution and the appropriate sequencing of work, so as not to damage any drainage piping during the base rock installation.
- B. Contractor to protect drain trenches to ensure that pipe is not damaged in any way by construction operations and that the rock is not contaminated with native soils, unintended construction material, or deleterious materials during subsequent construction operations.

3.03 PLACING THE ENGINEERED PERMEABLE ROCK BASE

- A. The stone shall be laid without damaging the soil subgrade and the in-field drainage system. Do not create depressions in subgrade with heavy equipment. If damage to subgrade occurs, correct as specified for subgrade preparation.
- B. The crushed stone shall be carefully and evenly spread over the subgrade and up both sides of the subdrain trenches to the depth shown on the Drawings.
- C. Excess water shall not be applied during installation of rock base and rough grading due to the potential of softening the subgrade and altering the grading.
- D. Crushed stone shall be smoothed and compacted uniformly to design grades by alternating raking, water settling, and rolling operations. Minimal rolling is advisable to achieve design grades and compaction. Only static rolling is allowed, and max 3-5-ton rollers should be used on the permeable stone base. Vibratory rolling of the permeable stone is not permitted.
- E. If the required compacted depth of the base course exceeds 6 inches, the base stone course shall be constructed in 2 or more layers or lifts of approximate equal thickness. Each layer shall achieve a uniform 90 percent relative compaction.
- F. Top of porous rock elevations shall be verified using laser-operation survey instruments. Refer to Conformance Surveying specifications for requirements.
- G. The final grade shall be ideally compacted to a uniform 90 – 92 percent relative compaction.
- H. Contractor shall not overwork the stone material and consequently modify its gradation characteristics. Minimal moving of the stone upon placement of the material on the subgrade and rolling is advisable to achieve design grades and compaction. Do not compact greater than 93 percent relative compaction.
- I. Contractor shall manually screed the top stone surface to ensure tolerances are met.
- J. Top of rock elevations shall be verified using laser-operation survey instruments. Refer to Conformance Surveying specifications for requirements.
- K. Finish surface planarity shall be verified, and if necessary adjusted, by the Contractor using string line method.
 - 1. Entire finished surface shall be "walked" with mason's line in increments of approximately 3 feet.
 - 2. A mason's line shall be held taught between two workers separated by a distance of approximately 40 feet then placed directly on the finished surface parallel to the direction of greatest slope.
 - 3. A third worker shall check for separations between the mason's line and the finished surface that are equal to or greater than the specified tolerances.
 - 4. Areas of separation shall be outlined with marking paint and the depth of separation indicated.

5. Areas outlined with marking paint shall be filled with top rock to the depth indicated and raked by hand. Filled areas shall be compacted to provide a non-yielding, smooth, flat surface.
 6. Final finished surface planarity shall be approved by the Owner and the synthetic turf installer.
- L. Once the top of the Engineered Permeable Rock Base is installed and compacted, the Contractor shall notify the Owner Testing Agent that it is ready for the field permeability test.
1. The Agent shall be given 2 working days' notice and have 2 days to complete the in-field test which will consist of a minimum of 4 controlled field permeability tests per synthetic turf field.
 2. Tests shall be by the following test method: ASTM F2898-11: "Standard Test Method for Permeability of Synthetic Turf Sports Field Base Stone and Surface System by Non-confined Area Flood Test Method"
 3. Permeability of placed Engineered Permeable Rock Base shall comply with specified requirements.
 4. If the test does not comply with section 1.10, the Contractor shall provide within 48 hours a written repair procedure to correct the permeability deficiency.
 5. Repair work, including associated delays, shall be the Contractor's sole responsibility. Fine tuning of the field base due to the testing operations is the responsibility of the Contractor.

3.04 INSTALLATION OF MANUFACTURED DRAINAGE MATERIAL

- A. Upon successful completion of installing the base, the porous drainage composite shall be installed in accordance with the Drawings and in strict compliance with the manufacturer installation instructions. Contractor to exercise extreme care in order to avoid disturbing the crushed stone base.
- B. Contractor to take measures to ensure that the product is not exposed to the outdoor elements longer than the manufacturer's recommendations. Product that exceeds this exposure time duration shall be removed from the project site immediately and not used on the project.
- C. Sections of the material shall be interlocked and/or connected to adjacent pieces of the drainage material in strict conformance with the manufacturer's written installation instructions.
- D. Provide geotextile filter fabric in the areas designated on the Drawings. Fabric shall be laid in shingle fashion overlapping 12 inches minimum following direction of slope with upslope fabric laying atop the down slope fabric.

END OF SECTION

SECTION 32 31 13

CHAIN LINK FENCING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: chain link fencing improvements as shown on the Drawings including, but not necessarily limited to, the following:
 - 1. Galvanized chain link fabric, posts, gates, and hardware.
 - 2. Thermally fused and bonded PVC coated ("vinyl coated") galvanized chain link fabric with painted posts, gates, hardware, and related appurtenances.
 - 3. Chain link fence with integrally woven privacy plastic slats.
 - 4. Baseball / Softball backstop(s) with baseboards.
 - 5. Batting cage(s) with chain link roof and interior netting.
 - 6. Concrete footings and mow bands.

- B. Related Requirements:
 - 1. Section 01 33 00 - Submittal Procedures
 - 2. Section 09 91 15 - Exterior Site Painting
 - 3. Section 32 33 00 - Site Furnishings
 - 4. Section 32 32 15 - Landscape Concrete
 - 5. Section 32 90 00 - Planting
 - 6. Structural Drawings

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
 - 2. A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - 3. A392 - Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric.
 - 4. F567 - Standard Practice for Installation of Chain-Link Fence."
 - 5. F1043 - Standard Specification for Strength and Protective Coatings on Steel Industrial Chain Link Fence Framework.
 - 6. F1083 - Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures.

- B. American Welding Society (AWS):
 - 1. A2.4: "Symbols for Welding, Brazing and Nondestructive Examination."

- C. Chain Link Fence Manufacturers Institute (CLFMI): Product Manual CLF-PM0610.

- D. Industrial Steel Guide for Fence, Rails, Posts, Gates and Accessories.

- E. State of California, Business and Transportation Agency, Department of Transportation (Caltrans) "Standard Specifications."

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action and Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.

- B. Sequence and Scheduling: Contractor shall coordinate construction timing of chain link fencing and related work with installation of concrete work specified in Section 32 32 15 – Landscape Concrete and all other work.

1.04 ACTION SUBMITTALS

- A. Shop Drawings: To scale drawings showing all different types and sizes of backstop units, gates, and fencing systems.
 - 1. Shop Drawings shall include, but may not be limited to:
 - a. All information regarding clearances, connections, components and any miscellaneous related appurtenances (such as wood baseboards at backstops, locking mechanisms etc.).
 - b. Concrete footing and reinforcement information.
 - 2. Indicate materials, dimensions, sizes, weights and finishes of components. Include plans, elevations, sections and other required installation and operational clearances, connections, components and miscellaneous related appurtenances such as wood baseboards at backstops and locking.
 - 3. Show required field measurements and interface with work of other Sections. Provide details showing interface and anchorage of fencing and gates with adjacent construction, both new and existing.
 - 4. Details showing post anchorage, attachment and bracing. Provide setting drawings, templates, instructions, and directions for installation of anchorage devices.
 - 5. Details of gates and hardware.
 - 6. Welds, both shop and field, shall be indicated by AWS "Symbols for Welding, Brazing and Nondestructive Examination," A2.4.
- B. Product Data: Manufacturer's descriptive literature for materials and components of the chain link fencing system including coatings, fittings, and hardware.
 - 1. Include the manufacturer's name and catalog number for each item where applicable.
 - 2. Clearly identify which portions of the information on the printed literature are applicable if more than one product is shown.
- C. Samples:
 - 1. Chain-link fabric, approximately 12 inches square, if requested by Owner's Representative.
 - 2. Hardware and fittings Owner's Representative.
 - 3. Sample of privacy slat system.
 - 4. Sample of Windscreen.

1.05 INFORMATIONAL SUBMITTALS

- A. Installation Instructions and/or Drawings: Submit as applicable.

1.06 QUALITY ASSURANCE

- A. Welding:
 - 1. Qualifications: Certified and qualified in accordance with AWS D1.1.
 - 2. Procedures and operations shall comply with AWS "Standard for Welding Procedure and Performance Qualifications," B2.1.
 - 3. Comply with AWS publication "Welding Zinc Coated Steel" for galvanized products.
 - 4. Welding inspector's qualifications shall be in accordance with AWS D1.1.

PART 2 - PRODUCTS

2.01 DESIGN AND PERFORMANCE CRITERIA

- A. It is intended that all fencing, by area, receive the same finish coating wherever possible. Nuts, bolts, applicable moving portions of hinges etc. shall be painted to match with PVC touch-up paint in vinyl or powder coated systems.
- B. Except as otherwise specified, comply with Chain Link Fence Manufacturers Institute (CLFMI) Product Manual.
- C. Industry Standards: Materials and installation shall conform to the requirements of the Chain Link Fence Manufacturers Institute (CLFMI) "Product Manual."
- D. Regulatory Requirements: Pedestrian gates and related hardware shall comply with applicable codes, including provisions for accessibility required by CBC Chapters 10 and 11B, Part 2; and the Americans with Disabilities Act (ADA) Standards for Accessible Design.
- E. Bottom 10 inches of pedestrian gates shall have a smooth uninterrupted surface.

2.02 MATERIALS

- A. Fabric: Galvanized steel wire complying with ASTM A392, Class 1, with not less than 1.2 ounce zinc coating per square foot.
 - 1. Selvage: Knuckled finish top and bottom.
 - 2. Steel Fabric: Comply with Chain Link Fence Manufacturers Institute (CLFMI) Product Manual. Furnish one-piece fabric widths for fencing up to 16 feet high. Wire sizes includes zinc coating.
 - 3. Mesh Opening: 2 inches.
 - 4. Wire Diameter: 9-gauge (0.148-inch diameter), unless noted otherwise.
 - 5. Polymer Coating: Thermally fused and bonded polyvinyl chloride (PVC) complying with ASTM F668 Class 2b, 7mil (0.18 mm) thickness thermally fused over zinc-coated wire.
 - a. Color: Black and in compliance with F934.
- B. Framework: Posts and rails shall be Schedule 40 pipe complying with conforming to ASTM F1083, Regular Grade, 30,000 psi Yield Strength, or ASTM F1043, Group 1-C, High Strength Grade 50,000 psi Yield Strength, galvanized with no less than 1.8 ounces of zinc coating per square foot of surface area complying with ASTM A123.
 - 1. Strength requirements for posts and rails shall conform to ASTM F1043 or F1083 as noted below.
 - 2. Pipe shall be straight, true to section, material, and sizes specified, and shall conform to the following weights per foot:

NPS in inches	Outside Diameter (OD) in inches	Type 1 Steel ASTM F1083 (30 KSI)	Type II Steel ASTM F1043 (50 KSI)
1	1.315	1.68	1.35
1.25	1.660	2.27	1.84
1.5	1.900	2.72	2.28
2	2.375	3.65	3.12
2.5	2.875	5.79	4.64
3	3.500	7.58	5.71
3.5	4.000	9.11	6.56

NPS in inches	Outside Diameter (OD) in inches	Type I Steel ASTM F1083 (30 KSI)	Type II Steel ASTM F1043 (50 KSI)
4	4.500	10.79	---
6	6.625	18.97	---
8	8.625	28.55	---

C. Fittings and Accessories:

1. Unless specified otherwise, steel fence fittings and accessories shall comply with ASTM F626 and be galvanized in accordance with ASTM A53, with zinc weights per Table 1 of ASTM A153.
2. Tension Wire: 7-gauge (0.177 inch diameter) coil spring steel with finish to match fabric.
3. Tie Wires: 9 gauge (0.148 inch diameter) steel with finish to match fabric.
4. Caps: Provide weather tight closure cap for each post and exposed ends of framing. Provide line post caps with loop to receive wire or top rail with finish to match fabric.
5. Tension Bars: Hot-dip galvanized steel with minimum length 2 inches less than full height of fabric, minimum cross-section of 3/16 inch by 3/4 inch and minimum of 1.2 ounce zinc coating per sq. ft. of surface area.
6. Tension Clips: Minimum 3/4 inch wide 12-gauge (.105 inch) thick with finish to match fabric.
7. Truss Rods: Hot dipped galvanized steel rods with a minimum diameter of 5/16 inch (7.9 mm).

D. Hardware for Swinging Gates:

1. General:
 - a. Hardware shall be of adequate size and strength to provide proper operation of gates.
 - b. Provide hinges, latching and locking devices, and other hardware as shown on the Drawings or required for a complete operable installation.
2. Hinges: Master Halco heavy duty, or acceptable equal.
3. Self-closing Hinges:
 - a. For gates up to 330 lbs and 5-feet wide: Heavy-duty self-closing hinge with hydraulic damping, ADA compliant (requiring maximum 5 lbs of operating force per CBC 11B-309.4); Locinox Mammoth Heavy Duty "Mammoth180" or accepted equal.
 - b. For gates up to 440 lbs and 6 and 1/2 -feet wide: Heavy-duty self-closing hinge with hydraulic damping, ADA compliant (requiring maximum 5 lbs of operating force per CBC 11B-309.4); Locinox Mammoth Ultra Heavy Duty "Mammoth-HD" or accepted equal.
4. Panic Hardware:
 - a. Panic bar requiring maximum 5 lbs of operating force per CBC 11B-309.4; "Von Duprin 98/99 – AX series" push pads, strike plates, and receiver brackets" or accepted equal.
 - b. Pull Handle, Strike Plate, Guard Plate, and Mounting Plate shall be compatible with panic bar system, and be provided by Von Duprin, or accepted equal.
5. Accessible Pull Handle:
 - a. Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist, requiring maximum 5 lbs of operating force per CBC 11B-309.4.
 - b. One of the following to be selected by District Representative:
 - 1) Standard Operation: Von Duprin 996L
6. Gate Latch Hardware:
 - a. Gate latch hardware shall be sized to match receiving fence/gate post size.
 - b. Provide and attach welded accessible pull handle where specified.
 - c. Fulcrum gate latch, Model "#STRONG-ARM-SNG" by DAC Industries, available from Hoover Fence Co., (800) 355-2335.

E. Batting Cage Netting and Accessories: SportsField Specialties custom netting BSSN60; or equal.

1. Refer to Section 32 33 00 – Site Furnishings for netting information.
2. #60 knotted nylon net, 1-7/8" square mesh.

3. Netting shall be affixed to eyebolts with 1/4 inch minimum vinyl-coated stainless steel aircraft cable.
4. Galvanized Thimbles, wire rope clamps, carabineer clips, hog rings and jaw and jaw turnbuckles.
5. Black vinyl encased 1/4" galvanized chain ground weight.
6. Fencing shall be provided with concrete edgebands unless otherwise noted.
 - a. Edgebands shall be installed as detailed on plans.
 - b. Gates shall have the same edgeband width as adjacent fencing.

2.03 ADDITIONAL MATERIALS AND COMPONENTS

- A. Concrete: Minimum Class B, 28-day compressive strength of 2,500 psi as specified in Section 32 32 15 - Landscape Concrete.
- B. Privacy Slats: Tubular PVC, UV-light stabilized, flame resistant, self-locking, sized to fit specified mesh opening, and providing full privacy; "Fin/Slat 1000" by Master Halco, or equal.
 1. Color: Redwood, or as selected by Owner's Representative from reviewed submittals.
- C. Backstop Baseboards: Surfaced Kiln Dried Douglas Fir painted with a primer coat and two coats of durable exterior enamel paint.
 1. Color: Dark Red to Match School Logo, Request Color Match from District
 2. Install as shown on the Drawings.
 3. Galvanized or Stainless Steel Bolts and nuts shall be painted the same color as the boards after installation.
 4. Top board to have 1/2" radius on the field side and all outside edges at end of the boards to avoid splintering.
- D. Galvanizing-Repair Paint: Minimum 82 percent zinc-dust-content paint for regalvanizing welds in galvanized steel, complying with FS DOD-P-21035a; "Z.R.C. Cold Galvanizing Compound" by ZRC Worldwide, "Cold Galv Primer" by Valspar, or equal.
- E. Distance Banners, Signage and all other Applicable Attachments:
 1. Refer to Section 32 33 00, "Site Furnishings" for product information. Products shall be attached at each grommet location and per manufacturers recommendations. Grommets shall be located in thicker seamed areas. No attachment grommets in a single layer of fabric will be allowed.
- F. Top of Fence Protective Cap: Attach with heavy duty zip ties spaced every 2'-0" minimum, color matched.

2.04 FABRICATION

- A. Welding: Welds shall be shop fabricated prior to galvanizing unless otherwise acceptable to Owner's Representative and were field welding is unavoidable.
- B. Repair zinc coating damaged after fabrication with specified repair paint in accordance with ASTM A780, AHDGA publication, "Recommended Practice for Touch-up of Damaged Galvanized Coatings," and manufacturer's recommendations for application of repair paint.
- C. Steel Framework: System shall comply with the following minimum requirements.
 1. Posts, Rails, Braces, and Gate Frames: Type I galvanized steel pipe as specified.
 2. End, Corner, and Pull Posts for the Following Fabric Heights: As noted on the Drawings.
 3. Line or Intermediate Posts for the Following Fabric Heights: As noted on the Drawings.
 - a. 8 Feet to 15 Feet: 2.875 inch outside diameter (2-7/8 inch outside diameter).
 4. Top, Bottom and Horizontal Intermediate Rails: 1.66 inch outside diameter (1-5/8 inch outside diameter).

5. Gate Posts: Single gate leaf, and one leaf of a double gate installation, for nominal gate widths as follows: As noted on the Drawings.
6. Gate Frames: Single or double gate for nominal gate widths as follows:
 - a. 6 Feet to 10 Feet: 1.90 inch outside diameter (1-7/8 inch outside diameter).
 - b. Under 6 Feet: 1.66 inch outside diameter (1-5/8 inch outside diameter).
7. Batting Cage Roof: As noted on the Drawings.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Prior to excavation, layout all fencing locations for review and acceptance by Owner's Representative.
- B. Do not begin installation and erection before final grading is completed, unless otherwise permitted.

3.02 ERECTION

- A. General: Erect chain link fence and related items in accordance with ASTM F567, in strict conformance with reviewed and accepted shop drawings, and manufacturer's recommendations.
- B. Set all posts straight, plumb, and true to line.
 1. Set line posts at equal spacing not to exceed 10 feet on centers, in concrete footings not less than 10 inches around and 36 inches deep.
 2. Set terminal posts at corners, ends, and gates, in concrete footings not less than 12 inches around and 36 inches deep.
 3. Slope tops of concrete footings so as to provide drainage away from posts.
- C. Excavation: Drill or hand-excavate holes for posts to diameter and spacing indicated in firm, undisturbed or compacted soil.
 1. Unless noted otherwise, excavate holes for each post to minimum diameter recommended by fence manufacturer, but not less than 4 times largest cross section of post.
 2. Unless noted otherwise, excavate hole depths approximately 3 inches lower than post bottom, with bottom of posts set not less than 36 inches below finish grade surface.
- D. Setting Posts: Center and align posts in holes 3 inches above bottom of excavation. Space chain link posts maximum 8 feet on center unless noted otherwise. Surface mount posts with mounting plates where indicated. Fasten with lag bolts and shields.
- E. Top Rails: Run rail continuously through line posts caps, bending to radius for curved runs and at other posts termination into rail end attached to posts or post caps fabricated to receive rail. Provide expansion couplings as recommended by fencing manufacturer.
- F. Bottom Rails: Install bottom rails between posts with fittings and accessories as shown in Drawings, as applicable.
- G. Brace Assemblies: Install braces so posts are plumb when diagonal rod is under proper tension.
- H. Tension Wire: As applicable, install at bottom of fabric (and at top if top rail is not specified) as shown in Drawings. Install tension wire before stretching fabric and attach to each post with ties. Secure wire to fabric with 12.5 gauge hog rings at 24 inches on center maximum.
- I. Fabric: Leave approximately 2 inches between finish grade and bottom selvages (1 inch at backstops) unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Install fabric on

infield or primary use side of fence, unless noted otherwise, and anchor to framework so that fabric remains in tension after pulling force is released.

- J. Tension Bars: Provide one bar for each gate and end post, and two for each corner and pull post, except where fabric integrally woven into post. Thread through fabric, and secure to end, corner, pull, and gate posts with tension clips spaced not over 15 inches on center.
- K. Tie Wires: Use U-shaped wire of proper length to secure fabric firmly to posts and rails with ends twisted at least 2 full turns. Bend ends of wire to minimize hazard to persons or clothing. Tie fabric to line posts 12 inches maximum on center and to rails and braces 24 inches maximum on center.
- L. Fasteners: Install nuts for tension clips and hardware bolts on side of fence opposite fabric side. Peen ends of bolts or score threads to prevent removal of nuts. Cut all bolts within three threads of nut or less.
- M. Field Welding:
 - 1. Field welds shall be completed by a Certified Structural Welder.
 - 2. Comply with applicable AWS specification for procedures of manual shielded metal arc welding, for appearance and quality of welds, and for methods used in correcting welding work.
 - 3. Repair zinc coating damaged by field welding as specified for shop welding.
- N. Bolts shall be cut back to within three threads of the nut.

3.03 GATE INSTALLATION

- A. Install gates as shown on the Drawings in accordance with reviewed submittals.
- B. Cut, drill, and fit as required for installation.
- C. Set work accurately in location, alignment, and elevation; plumb, level, and true; and free of rack; measured from established lines and levels.
- D. Adjust items prior to securing in place so as to ensure proper matching of components and correct alignment.
- E. Field weld all gate hinges in place once gates are aligned and approved by owners representative.

3.04 ADJUSTMENT AND TOUCH-UP

- A. Inspect installed work. Verify that gates, controls, and hardware operate properly. Correct deficiencies.
- B. Restore products and finishes damaged during installation and construction period so that no evidence of correction work remains.

END OF SECTION

SECTION 32 32 00
LANDSCAPE CONCRETE MASONRY

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Concrete unit masonry at pool area columns and mechanical building walls.
 - 2. Mortar and grout.
 - 3. Reinforcement for masonry.
- B. Related Requirements:
 - 1. Landscape Concrete: Section 32 32 15; concrete footings.
 - 2. Exterior Site Painting: Section 09 91 15; painting of masonry.

1.02 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action and Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.
- B. Coordinate with other Sections for work to be installed in conjunction with concrete unit masonry.

1.03 ACTION SUBMITTALS

- A. Shop Drawings: To-scale drawings to illustrate detailing, fabrication, bending and placement of unit masonry reinforcing bars.
 - 1. Comply with ACI 315 showing bar schedules, stirrup spacing, diagrams of bent bars and arrangements of masonry reinforcement.
 - 2. Indicate location of conduit, plumbing and other items embedded in unit masonry walls in coordination with placement of reinforcement.
- B. Samples for Verification:
 - 1. Full-size units for each exposed decorative CMU unit other than gray, smooth-faced, units.
- C. Mix Designs:
 - 1. Verification of mortar strength and governmental approval if other than proportion specifications included in CBC Table 21-A are to be used.
 - 2. Verification of grout strength if other than proportion specifications included in CBC Table 21-B are to be used.

1.04 INFORMATIONAL SUBMITTALS

- A. Mill test reports for all reinforcing steel.
- B. Certificates:
 - 1. Material certificates for the following signed by the manufacturer and the Contractor certifying that each material complies with requirements and standards specified.
 - a. Each material and grade of reinforcing bars.
 - b. Each type and size of anchors, inserts, ties, and accessories.
 - 2. Plant certificates for concrete masonry units to the District's Testing Agency and Architect stating that all units have been properly cured before shipment and that they conform to requirements of these Specifications, including but not limited to, requirements for moisture content per ASTM C90.

- C. Extreme Weather Procedures: Cold and hot-weather construction procedures evidencing compliance with requirements specified in ACI 530.1 and these Specifications.

1.05 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with applicable requirements of CBC Chapter 24 - Masonry.
- B. Industry Standards: Comply with applicable requirements of:
 - 1. American Concrete Institute (ACI):
 - a. ACI 315 - Details and Detailing of Concrete Reinforcement.
 - b. ACI 530.1 – Specifications for Masonry Structures
 - 2. Concrete Masonry Association of California and Nevada (CMACN) - Typical Details for Concrete Masonry.
- C. Mockup: First installed area of exterior exposed CMU, at least 20 square feet, shall serve as a mock-up for review and approval by District's Representative of workmanship, visual effect, and interface with adjacent construction.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. At the time of delivery to the site, masonry units shall conform to moisture requirements of ASTM C90 Type I, Table 1. In addition, masonry units shall meet moisture requirements during laying of units and grouting until work is complete.
- B. Store masonry units above ground on level platforms which allow air circulation under stacked units.
- C. Cover materials as necessary to protect against wetting prior to use.

1.07 FIELD CONDITIONS

- A. Environmental:
 - 1. Hot Weather Conditions: Protect masonry construction from direct exposure to wind and sun when erected in an ambient air temperature of 90 degrees F or greater in the shade and when relative humidity is less than 50 percent.
 - 2. Cold Weather Conditions: Do not place unit masonry when temperature is below 40 degrees F, unless District's Representative approves, and precautions are taken for preventing damage from freezing before and after placement.
 - a. Maintain minimum 40 degrees temperature for at least 96 hours after mortar and grout are placed.
 - b. Prevent masonry from freezing for at least 7 days after placement and grouting.
 - c. Materials used shall be free from frost.
 - d. Masonry shall not be placed on frozen substrate.
- B. Protection:
 - 1. Protect surrounding work as required against damage from masonry work.
 - 2. Protect masonry units from moisture absorption until masonry wall is completed and facing materials or coatings are installed.

PART 2 - PRODUCTS

2.01 DESIGN AND PERFORMANCE CRITERIA

- A. Masonry Standard: Comply with TMS 602/ACI 530.1/ASCE 6 except as modified by requirements in the Contract Documents.

- B. Source Limitations:
 - 1. Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.
 - 2. Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.
- C. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects are exposed in the completed Work and will be within 20 feet vertically and horizontally of a walking surface.

2.02 CONCRETE MASONRY UNITS

- A. Regular (Precision) Hollow Concrete Masonry Units: ASTM C90, medium weight smooth face, uniform gray color.
 - 1. Masonry units shall have minimum compressive strength of 2,800 psi, for minimum design f'm of 2,000 psi.
 - 2. Provide open end units or "H" block units, for stacked bond pattern.
 - 3. Provide bond beam units at horizontal reinforcing.
 - 4. Provide open end units at vertical reinforcing.

2.03 REINFORCEMENT AND ANCHORAGES

- A. Refer to CONCRETE MASONRY NOTES, Sheet S1.1 for additional requirements
- B. Horizontal Reinforcement: Hot-dip galvanized, ladder-type, single-wythe, 9-gage wire reinforcing; Hohmann and Barnard, Dur-O-Wall, Heckmann, Wire-Bond, or equal.
- C. Reinforcing Bars:
 - 1. Bars: New billet steel, ASTM A615, Grade 60.
 - 2. Tie Wires: ASTM A82.
- D. Reinforcing Bar Positioners: Dur-O-Wall "D/A 811" and "D/A 816," Heckman Building Products, Inc. No. 376, Hohmann & Barnard, Inc. "#RB Rebar Positioner," or equal.

2.04 MORTAR AND GROUT MATERIALS

- A. Cement for Mortar and Grout: Type I or Type II Portland Cement conforming to ASTM C150.
 - 1. Type II Portland Cement may be used only if it equals strength of Type I.
 - 2. All cement used (mortar and grout) shall be low alkali type (0.6 percent maximum).
- B. Aggregate:
 - 1. Mortar: Sand shall conform to ASTM C144 for standard CMU except that not less than 3 percent of sand shall pass #100 sieves.
 - 2. Grout: Grout shall have minimum compressive strength of 3,000 psi, per ASTM C476.
 - a. Course: Maximum 3/8-inch size; 200 percent by volume.
 - b. Fine: Washed river sand; 225 percent by volume.
- C. Lime Putty: Made from hydrated lime conforming to ASTM C207.
- D. Grout Admixture: Sika Chemical Corporation "Sika Grout Aid Type II."
- E. Water: Clean and potable.

2.05 MORTAR AND GROUT MIXES

A. General:

1. Accurately measure materials for mortar and grout in suitably calibrated devices. Measurements based on dry loose volume. Shovel measurements or fractional sack batches not acceptable.
2. Place sand, cement, and water, in that order, in mixer and mix for at least two minutes.
3. For mortar, add lime and continue mixing for at least 10 more minutes or as much longer as required to secure a uniform mass.
4. Retemper mortar only by adding water into a basin made with mortar. Work mortar carefully in.
5. Remove from work any mortar or grout which is unused within one hour after initial mixing.
6. Proportion grout by volume with sufficient water added to produce consistency for pouring without segregation.
7. Do not use calcium chloride in mortar or grout.
8. Admixtures: Add in accordance with admixture manufacturer's instructions and if included in the approved mix design.

B. Mortar Mix: In compliance with CBC requirements and ASTM A270, Type S for regular grade block.

C. Grout Mix: In compliance with CBC requirements and ASTM C476.

D. Design Strengths:

1. Mortar: Not less than 1,800 psi at 28 days.
2. Grout: Not less than 3,000 psi at 28 days.

PART 3 - EXECUTION

3.01 REINFORCING STEEL

- A. Place reinforcement in accordance with ACI 531, supported and secured against displacement, with 1/2-inch minimum clearance from the interior face of the masonry unit.
- B. Maintain position within 1/2-inch of true dimension.
- C. Verify reinforcement is clean, free of scale, dirt, or other foreign coatings which would reduce bond to grout.

3.02 MORTAR BEDS

A. Hollow Units: Provide full mortar coverage on horizontal and vertical face shells and webs in all courses.

3.03 PLACING AND BONDING

- A. Placing and Bonding: Lay masonry to lines and levels indicated, plumb and true, using only dry masonry units.
- B. Cutting: Make jobsite cuts with proper tools to provide straight unchipped edges and to fit masonry construction to final form. Take care to prevent breaking masonry unit corners or edges.
- C. Laying: Lay masonry in full bed and head joint of mortar, properly jointed with other Work.
 1. Buttering corners of joints, or excessive furrowing of mortar joints will not be accepted.
 2. Do not shift or tap masonry units after mortar has taken initial set. Where adjustment is necessary, remove mortar and replace.

- D. Pattern: Lay masonry in running bond, with vertical joints located at center of masonry units above and below. Align vertical cells for continuity of reinforcement and grout. Course one block unit and one mortar joint to equal 8-inches. Make vertical and horizontal joints equal and of uniform thickness.
- E. Horizontal and Vertical Face Joints:
 - 1. Nominal thickness: 3/8-inch, uniform.
 - 2. Tooling: Tool joints when thumbprint hard with joint tools to compress mortar to ensure full contact with block surfaces.
 - 3. Concealed joints: Flush.
 - 4. Exposed joints: Flush.
 - 5. Internal cleaning: Remove mortar protruding into cells of cavities to be reinforced or filled.
- F. Intersections and Corners: Fully bond intersections, external and internal corners.
- G. Joining Masonry Work: Provide expansion joints in accordance with reference standards. When joining fresh masonry to set or partially set masonry construction, clean exposed surface of set masonry and remove loose mortar prior to laying fresh masonry.
- H. Cold Joints: If necessary, to stop off a horizontal run of masonry, rack back one-half block length in each course. Do not use toothing to join new masonry to set or partially set masonry when continuing a horizontal run.
- I. Cleaning: Remove excess mortar before mortar sets. Clean surfaces at exposed masonry to present even surface texture and color.

3.04 BUILT-IN WORK

- A. Avoid cutting and patching. Coordinate placement of built-in products specified in other Sections so built-in products are placed as masonry is laid.
- B. Install bolts, anchors, nailing blocks, sleeves, inserts, frames, flashings, conduit, and other built-in products as masonry progresses. Install bolts in templates to assure proper alignment and location.
- C. Solidly grout spaces around built-in products.

3.05 GROUTING

- A. Grout all cells of masonry units which contain rebar, bolts, etc., all cells below grade, and as specified on the Drawings. Work grout into cores and cavities to eliminate voids. Do not displace reinforcing steel when placing grout.
- B. Inspection Holes: Provide inspection and cleanout holes at base of vertical cell grout lifts in excess of 5 feet. Clean concrete grout spaces of excess mortar and debris before grouting.
- C. Construction Joints: When grouting is halted for one hour or longer, form horizontal construction joints by stopping the pour of the grout 1-1/2 inches below top of uppermost unit.
- D. After inspection of concrete grout spaces, plug cleanout holes with masonry units. Brace against wet grout pressure.

3.06 PROTECTION OF WORK

- A. Protect sills, ledges and off-sets from mortar drippings or other damage during construction. Remove misplaced mortar or grout immediately.
- B. Cover top of walls with non-staining waterproof coverings when Work is not in progress.

3.07 CURING

- A. In hot, dry conditions, CMU shall be fogged during a 3-day curing period at least twice a day.

3.08 POINTING AND CLEANING

- A. At final completion of unit masonry work, fill holes in joints and tool.
- B. Cut out and re-point defective joints.
- C. Dry brush masonry surface after mortar has set, at end of each day and after final pointing.
- D. Leave masonry and surrounding surfaces clean and free of mortar spots and droppings.

END OF SECTION

SECTION 32 32 15
LANDSCAPE CONCRETE

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Architecturally exposed formed concrete.
 - 2. Natural site concrete at utility pads.
 - 3. Subgrade, natural, as-cast concrete for foundations, landscape fencing, furnishings and other site improvements.

- B. Related Requirements:
 - 1. Section 31 20 00 - Earth Moving
 - 2. Section 32 13 13 - Concrete Paving
 - 3. Section 32 33 00 - Site Furnishings

1.02 REFERENCES

- A. State of California, Business and Transportation Agency, Department of Transportation (Caltrans) "Standard Specifications."

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action and Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.

- B. Pre-Installation Meeting: Conduct meeting at Project with Owner's Representative and concrete installer at site to review scope of landscape concrete work and expectations.
 - 1. Meeting shall be scheduled after approval of mockups and sufficiently in advance of commencement of architecturally exposed concrete for the site improvements.
 - 2. Record discussions of conference and any conflict, incompatibility, or inadequacy. Furnish a copy of record to each participant.

- C. Coordination:
 - 1. Coordinate delivery so that mixes may be immediately poured upon arrival at site.
 - 2. Coordinate proper installation of accessories and anchorage embedded in concrete and for the provision of holes, openings, and other penetrations necessary to the execution of the work of other trades.
 - 3. Coordinate mix design and finishing of colored concrete work to assure appearance match with cast-in-place concrete included on the Structural Drawings.

1.04 ACTION SUBMITTALS

- A. Product Data: Manufacturers' current catalog cuts and specifications for the following:
 - 1. Formwork panels and board form liners, if used.
 - 2. Expansion joint filler materials.
 - 3. Color admixtures.
 - 4. Curing compounds.
 - 5. Other items as requested by Owner's Representative.

- B. Samples:

1. Concrete materials as required for testing and inspection.
 2. Expansion Joint Sealant: Manufacturer's standard bead samples showing full range of colors available.
- C. Concrete Mix: Mix design and certified compressive strength test report for each concrete strength and type indicating additives and maximum aggregate size required. Report shall be prepared and certified by the ready-mix concrete supplier.

1.05 INFORMATIONAL SUBMITTALS

- A. Statement of installer/finisher qualifications if requested by Owner's Representative.
- B. Mill Certificates and Certifications for reinforcing.
- C. Delivery tickets for each load of concrete delivered to the site.
- D. NRMCA Certificate of Conformance: Submit a copy of the NRMCA Certificate of Conformance to the Owner's Testing Agency for the ready-mix plant, equipment, and mix trucks that will supply the concrete for the project.
- E. Record of pre-installation meeting.

1.06 QUALITY ASSURANCE

- A. Codes and Standards: Comply with the applicable provisions of the following codes, specifications and standards, except where more stringent requirements are shown or specified:
 1. California Building Code, Title 24, Part 2, Chapter 19A – Concrete.
 2. American Concrete Institute (ACI):
 - a. ACI 301: Specifications for Structural Concrete for Buildings
 - b. ACI 303.1: Standard Specification for Cast-In-Place Architectural Concrete.
 - c. ACI 303R: Guide to Cast-In-Place Architectural Concrete.
 - d. ACI 318: Building Code Requirements for Reinforced Concrete.
 - e. ACI 614: Recommended Practice for Measuring, Mixing, and Placing Concrete.
 3. Concrete Reinforcing Steel Institute, Manual of Standard Practice.
 4. NRMCA - National Ready-Mix Concrete Association, Quality Control Manual – Section 3: Certification of Ready Mixed Concrete Production Facilities.
- B. Contractor shall be responsible for quality of concrete in place and shall bear burden of proof that concrete as placed meets minimum requirements.
- C. Qualifications:
 1. Contractors Design Laboratory: When mixes are proportioned by trial batch method, engage a laboratory conforming to ASTM E329 and under direction of a civil engineer licensed in the State of California.
 2. Installer for Formed Surfaces: An experienced concrete contractor who has specialized experience installing cast-in-place architectural concrete similar in quality level, material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance. Installer shall retain a quality-control inspector, experienced in inspecting cast-in-place architectural concrete, and who is an ACI-certified Concrete Construction Inspector or is certified by ICC, as a Reinforced Concrete Special Inspector.
 3. Contractor's Testing Agency: An independent testing agency meeting "Recommended Requirements for Independent Laboratory Qualification," published by American Council of Independent Laboratories and basic requirements of ASTM E329, "Use in the Evaluation of Testing and Inspection Agencies as Used in Construction."
- D. Concrete Testing:

1. The Owner may retain, at its expense, a testing laboratory to perform material evaluation tests in accordance with Section 01 45 00 - Quality Control.
2. Testing may include slump tests and securing samples of concrete, cement, aggregates or other materials for testing. Applicable materials shall be provided by the Contractor at no additional cost to the Owner.

E. Mockups:

1. General:

- a. Mix design shall match that used on accepted sample panels and proposed for use in final construction including cement and color additive.
- b. Prepare at least one month before start of final concrete work to allow concrete to cure before observation.
- c. Concrete color and finish for mockup appearance shall match color and finish of accepted sample.
- d. Build mockups at the location indicated or, if not indicated, as selected by the Owner's Representative.
- e. Notify Owner's Representative 5 working days in advance of dates and times when mockups will be constructed and layouts will be ready for review.
- f. Contractor shall allow for preparation of 1 comprehensive mockup and up to 2 flat paving mockups for evaluation and final approval of each concrete.
- g. Color and texture shall be approved before starting construction.
- h. Perform specified slip-resistance testing on paving mockups.
- i. Maintain final accepted mockups in an undisturbed condition as a standard for judging the completed Work.
- j. Retain samples of sands, aggregates, and color additive used in the mockups for comparison with materials used in final work.
- k. Demolish and remove mockups when directed if not incorporated into the final work.

2. Walls and Steps:

- a. Wall Size: Minimum 4 feet long by maximum height and include 2 tie holes, horizontal and vertical corner treatment, and specified texture finishes.
- b. Stair Size: Minimum 2 treads and 2 risers by 4 feet long and including safety scoring at nosing.

3. Board Formed Concrete: An on-site mockup is required for the board-formed architectural cast-in-place concrete for verification of concrete appearance using the proposed mix design. Mockup will also be used for final evaluation and approval of appearance, formwork layout, and workmanship

- a. Size: Not less than 4 foot x 4 foot and to include a typical outside corner.
- b. Form release agent, if required in final construction, shall also be used on mock-up.
- c. Prepare promptly to allow concrete to cure sufficiently before observation by Owner's Representative.
- d. Mockup will be evaluated for visual appearance of concrete with and without water repellent and patching methods.
- e. Repairs: Representative areas of concrete shall be intentionally damaged, in the presence of the Owner's Representative, to mimic honeycombing, spalling, and other defects as may be experienced upon stripping of formwork.
- f. Repair it to demonstrate materials and methods proposed for repair of surface blemishes.
- g. Specific procedures and materials used for patched area shall be thoroughly documented.

F. Lines and levels shall be established by a licensed surveyor or registered civil engineer.

G. Owner's Representative will review all forms and joint layout prior to casting concrete.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Coordinate delivery so that mixes may be immediately poured upon arrival at site.

1.08 FIELD CONDITIONS

- A. Maintain control of concrete dust and water. Do not permit adjacent areas to be contaminated.
- B. For protection of existing trees to remain, see Arborist Report on the Drawings and Section 32 01 90 – Existing Tree Protection and Maintenance.
- C. Maintain control of concrete dust and water. Do not permit adjacent areas to be contaminated.

PART 2 - PRODUCTS

2.01 BASE MATERIALS

- A. Aggregate: Class 2, 3/4-inch maximum aggregate base, conforming to Section 26 of California Department of Transportation (CDT) "Standard Specifications."

2.02 FORMWORK

- A. General:
 - 1. Comply with ACI 347, "Recommended Practice for Concrete Formwork," for formwork and other form-facing material requirements.
 - 2. Furnish in largest practicable sizes to minimize number of joints unless otherwise shown on the Drawings.
 - 3. Seal joints to prevent leakage of paste using demonstrated effective method that will not affect appearance of finished surface.
 - 4. Forms may be reused at concealed surfaces. Forms shall not be reused for exposed concrete surfaces if there is any evidence of surface wear or defect that would impair the quality of the surface or if their reuse will evident and produce a noticeable variation in the appearance in the completed work.
 - 5. Formwork Surface Class at Exposed Concrete: Class A. In addition to ACI 303.1 limits on form-facing panel deflection, limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, to 1/8 inch.
- B. Forming Materials:
 - 1. Panels at Smooth Concrete: New, manufactured without addition of urea-formaldehyde, minimum 3/4-inch thick, MDO plywood made specifically for forming of Architectural Concrete to achieve joint pattern shown on Drawings or accepted shop drawings; "PureKor MDO Concrete Formply" by Panel Source International, Inc., or equal.
 - 2. Unexposed Surfaces of Concrete: Plywood, lumber, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
 - 3. Framing: Contractor option, subject to meeting necessary strengths and surface tolerances.
- C. Form Hardware:
 - 1. Ties:
 - a. Typical: Metal, spreader type, removable to 1-inch from concrete face.
 - b. Exposed Concrete: Fiberglass rod ties, tinted to color to match concrete; "SuperTie" by RJD Industries, Inc., or equal, in tensile strength as selected by form designer.
 - 2. Wire ties and wood spreaders will not be allowed except that such devices may be permitted for footings, shallow foundations and similar other totally concealed below grade surfaces. Wood spreaders shall not remain in concrete.
- D. Form Release Agents:
 - 1. Concealed Concrete: Contractor option.
 - 2. Exposed Concrete: Colorless, free from oils, chemically active, guaranteed to provide clean, stain-free concrete release and not to interfere with future applied coatings and finishes.

2.03 REINFORCING

- A. Materials:
 - 1. Reinforcing Steel: Deformed billet steel bars, ASTM A615, Grade 60 for No. 5 and larger, Grade 40 for No. 4 and smaller.
 - 2. Tie Wire: ASTM A82, black annealed.
 - 3. Spacers, Bar Supports, and Other Accessories: In accordance with ACI 315. Galvanize metal items exposed to moisture, or use approved other non-corrodible, non-staining supports.
 - 4. Smooth Dowels for Expansion Joints: ASTM A615, Grade 40 smooth, billet-steel bars, shop painted with iron-oxide zinc-chromate primer.
- B. Reinforcing steel shall be cut and bent cold to exact lengths and shapes to comply with Drawings, reviewed shop drawings, and referenced codes and standards.
- C. Comply with the additional requirement shown on the Drawings.

2.04 CONCRETE MATERIALS

- A. Portland Cement: ASTM C150, Type II, low alkali brand, with a proven history of successful use with proposed aggregates. Cement shall be same brand and from same source throughout the Project.
- B. Hardrock Aggregate: ASTM C33.
- C. Water: Clean, potable concrete mixing water free from injurious amounts of salts, oils, acids, alkalis, organic materials or other deleterious matter.

2.05 CONCRETE ADDITIVES

- A. Pigment for Integrally Colored Site Concrete: ASTM C979, synthetic mineral-oxide pigments or colored water-reducing admixtures, color stable, nonfading, and resistant to lime and other alkalis; "Chromix Admixture for Color-Conditioned Concrete" by L. M. Scofield Co. as specified, or equal.
 - 1. If added to mix at Project site, additive shall be furnished in manufacturer's "Mix-Ready" disintegrating bags.
 - 2. Dosage Rate: As required to achieve color of approved sample but not exceeding 10 percent of weight of cementitious materials in mix.
 - 3. Colors: n/a
- B. Waterproofing: Crystalline type; "Xypex Admix C-1000" by Xypex Chemical Corporation, or equal.
- C. Additional Additives: As approved for structural concrete and recommended by concrete mix designer.

2.06 ACCESSORIES

- A. Curing Materials:
 - 1. Liquid Curing Compounds: ASTM C309, Type 1.
 - 2. Sheet Material: Waterproofed Kraft paper, ASTM C17, regular type.
- B. Fiber Expansion Joint Material: Preformed cellular fiber complying with ASTM D1751; 1/2 inch thick unless otherwise indicated; "SealTight Fiber Expansion Joint Filler" by W.R. Meadows or equal precut to proper size.

2.07 CONCRETE MIXING

- A. General:

1. Mix designs for concrete shall be Contractor-designed at its expense. Designs shall be prepared by a qualified agency approved by the Owner's Representative.
 2. Use admixtures according to manufacturer's written instructions.
 3. Ensure equipment and plant will afford accurate weighing, minimize segregation, and will efficiently handle materials.
 4. Deposit concrete into final position within 90 minutes of introduction of cement.
- B. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.
- C. Waterproofing: Crystalline waterproofing powder shall be added to the concrete mix at water features at rate of 3 percent by weight of Portland cement content, unless otherwise recommended by manufacturer for mix design.
1. Waterproofing shall be added to the concrete mix at time of batching.
 2. Thorough blending of the admixture throughout the concrete mix to ensure a homogeneous mixture is obtained.
- D. Minimum ultimate compression strength of concrete at 28 days is as follows:

Item	Strength	Maximum slump	Size of aggregate	Cement (# of 94 lb. sacks per yard)	W/C Ratio
Slab-On-Grade	3,000	4 inches	3/4"-1"	5	0.60
Walls and Footings	3,000	4 inches	3/4"-1"	5	0.60

- E. Adjustment to Concrete Mixes:
1. Mix design adjustments may be requested by Contractor when job conditions, weather, test results warrant, or to meet appearance of accepted samples or mockup.
 2. Test data for revised mix design shall be submitted to and accepted by Architect before using in work.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Use templates for anchor plates, bolts, inserts and other items embedded in concrete. Accurately secure so that they will not be displaced during placing of concrete.
- B. Piping and Conduit: Do not embed piping, other than electrical conduit at irrigation sleeves, in structural concrete.
1. Locate conduit to maintain strength of structures at maximum. Verify size, length, and location of electrical conduit.
 2. Provide sleeves for irrigation lines provided under Section 32 84 00 - Irrigation.
- C. Aggregate Base Course: Compact base course to thickness shown on Drawings in accordance with recommendations of the Geotechnical Engineer.

3.02 INSTALLATION OF FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.
1. Forms shall be tight enough to prevent loss of concrete mortar.
 2. Wavy surfaces and bulged vertical or slab surfaces in finished work will be rejected.

- B. Ties for exposed concrete surfaces shall be arranged symmetrically and shall be aligned both vertically and horizontally. Do not stagger.
- C. Extend forms for all exposed concrete at least 6 inches below finish grade.
- D. Do not disturb earth at bottoms of excavations for footings or foundations. Maintain these areas free of water, properly cleaned and leveled off.
- E. Assemble forms so that all construction joints appear only as shown on Drawings and as accepted by Owner's Representative. Incorporate all formwork joints into required reveal and expansion joints. No exposed form joints will be permitted.
- F. Ease all exposed edges, unless otherwise shown on Drawings. Do not chamfer.
- G. Thoroughly clean all formwork prior to pouring concrete. Where no form coating is used, wet down all wood.
- H. Place and secure anchorage devices and other embedded items. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
- I. Leave no wood in concrete, except pressure-treated nailers.

3.03 PLACING REINFORCEMENT

- A. Comply with Comply with CRSI's "Manual of Standard Practice" and additional requirements for placing reinforcement specified for structural concrete on the Drawings.
- B. Reinforcement shall be free of paint, oil, dirt, scale, or loose rust or coating that might reduce bond with concrete.
- C. When there has been a delay in placing concrete, reinforcement shall be inspected and, if necessary, cleaned, relocated, and tied at no additional cost to Owner.
- D. Wherever conduits, piping, inserts, sleeves, and similar item interfere with placing of reinforcing steel, obtain Owner's Representative's approval of method of procedure before concrete is placed.
- E. Securely tie and support reinforcement to prevent displacement by construction traffic and during casting of concrete.
- F. Splices not shown on the Drawings shall be accepted by Owner's Representative, in writing.
- G. Unless permitted in writing, reinforcement shall not be bent after being partially embedded in hardened concrete.
- H. Dowels shall be tied securely in place before concrete is deposited.

3.04 PLACING OF CONCRETE

- A. Notify Owner's Representative minimum 5 working days prior to pour.
- B. Preparation:
 - 1. Protect finished surfaces adjacent to areas to receive concrete.
 - 2. Verify that the Project Engineer and City Inspector, if required, have inspected reinforcement.
 - 3. Notify Project Engineer, City Inspector if required, and Contractor's testing laboratory at least two working days before placing concrete.

- C. Placing:
1. Moisten earth, and spray forms and reinforcement with water before placing concrete.
 2. Place concrete in continuous operation to permit proper and thorough integration and to complete scheduled placement.
 3. Hot-Weather Concreting: Conform to ACI 305 when mean daily temperature rises above 80 degrees F.
 4. Use vibrators for thorough consolidation of concrete.
 - a. Provide vibrators at each point of deposit during simultaneous placing to ensure timely consolidation around reinforcement, embedded items, and into corners of forms; ensure availability of spare vibrators in case of failures.
 - b. Do not place vibrators against reinforcement, attach to forms, or use to spread concrete.
 5. Distribute concrete in maximum 18-inch layers, unless otherwise accepted.
 6. Space points of deposit to eliminate need for lateral flow.

3.05 REMOVING AND REUSING FORMS

- A. Formwork for a given area shall be removed at the same time to enhance uniformity of final appearance.
- B. Formwork that does not support weight of concrete may be removed after cumulatively curing at not less than 50 degrees F for 24 hours after placing concrete provided concrete is hard enough to not be damaged by form-removal operations and provided curing and protection operations are maintained.
- C. Remove forms for exposed concrete so as to avoid damage to finish. Do not use pinch bars and similar tools for prying against exposed surfaces.
- D. Upon removal of forms, remove bolts, wires, and similar metal items not necessary to finished work to minimum 1 inch from surface. Remove them in such a way as to eliminate danger of rust stains from form-tie materials or other unprotected ferrous materials embedded in or adjacent to exposed concrete surfaces.
- E. Re-use of forms will only be permitted as specified. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Apply new form-release agent. Align and secure joint to avoid offsets.

3.06 FINISHING FORMED SURFACES

- A. Rough-Formed Finish on Unexposed Concrete: As-cast concrete texture imparted by form-facing material with tie holes and defective areas repaired and patched. Remove fins and other projections exceeding ACI 347R.
- B. Formed Finish on Exposed Concrete: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams.
 1. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch in height.
 2. Finish appearance shall match concrete on Building.
- C. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.
- D. Adjusting:
 1. Remove projecting fins, bolts, wire, nails, and similar items not necessary for the work, or cut them back 1 inch from the surface and patch in an inconspicuous manner.

2. Immediately after removal of forms, cut off snap ties extending from the face of concrete to at least 1 inch deep in the concrete. Fill or plug as detailed in Drawings.
3. Remove in its entirety and replace defective concrete work which after corrective patching, rubbing, or similar procedures fail to duplicate the appearance of unpatched work, conform to the standards set forth in these Specifications, or is determined as unacceptable by the Owner's Representative.

3.07 CONCRETE FINISHING

- A. General:
 1. Provide each concrete finish where shown in the Drawings.
 2. Provide samples and mockups as specified of all concrete finishes for review and acceptance prior to pouring concrete.
- B. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats.
- C. Trowel Finish: After applying float finish, apply first trowel finish and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance.

3.08 EXPANSION JOINTS

- A. General:
 1. Provide construction and expansion joints as shown. Where not shown, coordinate locations with the Owner's Representative.
 2. Form construction and isolation joints and tool edges true to line, with faces perpendicular to surface plane of concrete.
 3. Use only experienced personnel and forms or templates to achieve consistent lines.
- B. Unless noted otherwise on the Drawings, expansion shall be 1/2-inch wide, the full depth of the concrete section and conforming to Section 51 of the Caltrans "Standard Specifications."
 1. Extend joint fillers full width and depth of joint.
 2. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
 3. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
 4. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
 5. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- C. Sealant Filling of Expansion Joints:
 1. After the curing period, strip out all depth gauge strips and carefully clean expansion joints.
 2. Fill with joint compound in accordance with sealant manufacturer's instructions and ASTM C1193. Avoid spilling compound on adjacent surfaces or overflowing from joint.

3.09 PROTECTION AND CURING

- A. Protection:
 1. Protect concrete against rapid drying and damage by rain.
 2. Keep concrete moist for at least 7 days.
 3. Protect with liquid curing compound, or a covering that will not stain or discolor finished concrete surfaces.
 4. Obtain acceptance of proposed method prior to use.

- B. Curing: Cure concrete in accordance with the ACI Manual of Concrete Practice and all applicable requirements for curing and protection of concrete included in Sections 90-7 and 90-8 of the Caltrans "Standard Specifications."
- C. Integral Color Concrete: Cure colored concrete with only products approved by the manufacturer of the integral color pigments.

3.10 FIELD QUALITY CONTROL

- A. Samples: Owner's testing agency will take samples for laboratory testing during the course of the work when required by Code. Other specified and required testing shall be by the Contractor's testing laboratory.
- B. Contractor shall pay for full costs of removal of rejected concrete and its replacement with concrete of specified strength and retesting.

END OF SECTION

SECTION 32 33 00

SITE FURNISHINGS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Site furnishings and installation accessories as shown on the Drawings including, but not necessarily limited to, the following:
 - a. Trash/recycling receptacles.
 - b. 4 Row Bleachers.
 - c. Baseball pitching rubbers.
 - d. Softball pitching rubbers.
 - e. Baseball/softball bases
 - f. Baseball/softball plates
 - g. Foul poles.
 - h. BaseZone field wall padding
 - i. Batting cage netting.
 - j. Netted Hood
 - k. Net barrier system.
 - l. Flagpole.
 - m. Drinking fountain.
 - n. Drinking fountain in dugout.
 - o. Two tier team benches.
 - p. Scoreboard.
 - q. Outfield Distance Banners
 - r. Fence Cap
 - s. Guard Rail System (dugouts)
 - t. Bat rack
 - u. Bat and Helmet Cubby
 - v. Golf mats.
 - w. Golf ball containers
 - x. Golf netting
 - y. Golf Cups with Sleeve
2. Site Furnishings Product Matrix

B. Related Requirements:

1. Section 32 12 16 – Asphalt Paving
2. Section 32 13 13 – Concrete Paving
3. Section 32 18 13 – Synthetic Turf Playing Field

1.02 REFERENCES

- A. State of California, Business and Transportation Agency, Department of Transportation (Caltrans) "Standard Specifications."

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action and Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.
- B. Scheduling and Sequencing:

1. Do not install site furnishings prior to acceptance by Owner's Representative of area to receive items.
2. Coordinate construction timing of installation of site furnishings in conformance with other work interfacing with installation of the site furnishing items.

1.04 ACTION SUBMITTALS

- A. Shop Drawings: Submit complete shop drawings for all materials or furnishings requiring field or shop fabrication.
- B. Product Data: Manufacturer's catalog cut sheets of materials and equipment to be provided.
 1. Include the manufacturer and distributor name, and subcontractor as applicable.
 2. Cut sheets clearly describe the specific product by catalog number and that additional non-specified products that may appear on the same cut sheet are crossed out where applicable.
- C. Samples: Colors and finishes for products and furnishings requiring selection by the Owner's Representative.

1.05 INFORMATIONAL SUBMITTALS

- A. Statement of qualifications for manufacturers and installer if requested by the Owner's Representative.

1.06 CLOSEOUT SUBMITTALS

- A. Provide operation and maintenance data for items with operable, movable, or replaceable parts, for items with mechanical connections, and for other items as applicable.
- B. Extended warranties as specified.

1.07 QUALITY ASSURANCE

- A. Furnishings shall be reviewed for conformance with the intent of the Contract Documents and accepted by the Contractor prior to installation.
- B. Site furnishings shall be in a new, "first-class" condition as determined by the Owner's Representative at the time of Final Acceptance.
- C. Field Samples and Mockups: As requested by the Owner's Representative.

1.08 DELIVERY, STORAGE AND HANDLING

- A. General:
 1. The Contractor is responsible for coordination of the delivery, acceptance, handling, and storage of site furnishings.
 2. Store and handle site furnishings as acceptable to the Owner's Representative and so that work or access of others is not impeded.
 3. Protect site furnishings from theft or damage until such items have been accepted by the Owner.
- B. Packaging and Labeling: Furnish materials in manufacturer's unopened, original packaging, bearing original labels showing quantity, description, and name of manufacturer. Verify that materials and components are adequately padded and securely bound in such a manner that no damage occurs to the product during delivery and unloading at the site.

- C. Storage: Damaged materials will be rejected. Remove damaged materials from job site immediately and pay cost of replacement. Determination of damage shall be the sole authority of the Owner's Representative.
- D. Painted Finishes: Provide non-scratching, non-staining, firmly bound covering for shop-painted finishes until installed and accepted.
- E. Protect wood materials from stains.

1.09 WARRANTY

- A. Manufacturers: Provide Owner with manufacturer's written extended product warranties as available for the specified products.

PART 2 - PRODUCTS

2.01 SITE FURNISHINGS - GENERAL

- A. In addition to those described in the following Articles, refer to the Site Furnishing Matrix included at the end of this Section for complete list of items to be provided.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Prior to commencement of work described in this Section, carefully inspect installed work, and verify all such work is correct and complete. Immediately notify the Owner's Representative of any discrepancy before proceeding with work.

3.02 INSTALLATION - GENERAL

- A. Conform to layout shown on Drawings. Final placement shall be field verified with the Owner's Representative.
- B. Installation of products shall be as shown in the Drawings, or according to manufacturer's instructions. If discrepancies are found, or if information is lacking, consult with the Owner's Representative prior to beginning the work.
- C. Concrete footings shall conform to requirements of Section 32 32 15 – Landscape Concrete unless noted otherwise.
- D. Furnish anchorage and fastening required for installation to ensure proper fit and accurate placements. Bolts, where exposed, shall be cut back to within three threads of the nut.

3.03 TRASH RECEPTACLES

- A. Install level and plumb in accordance with manufacturer's instructions at locations indicated on the Drawings.

3.04 BICYCLE RACKS

- A. Surface flange mount level, plumb, square, accurately aligned, correctly located in accordance with the Drawings, and without warp.
- B. Secure in place with specified anchor bolts through flange holes.

3.05 BLEACHERS

- A. Temporary bleachers shall be installed on a concrete pad and bolted to concrete pad as shown on the Drawings.
- B. Three of the bleacher skids shall be bolted with a 3-inch concrete bolt with 4 bolts per skid.

3.06 CLEANING AND ADJUSTMENT

- A. Protect furnishings from damage until acceptance of work. Do not remove protective wrappings from furnishings until so instructed by the Owner's Representative.
- B. Clean soiled site furnishings prior to acceptance by Owner.
- C. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by the Owner's Representative.
- D. Replace damaged items to the satisfaction of the Owner's Representative. Replace missing accessories at no cost to Owner.

3.07 SITE FURNISHINGS MATRIX

ITEM	DESCRIPTION	MANUFACTURER	MODEL NO.	QTY.	FINISH/COLOR	DISTRIBUTOR/CONTACT
A.	Trash/Recycling Receptacle	Dumor	435-64SH	4 ea.	Powder-Coat-Deep Red	Dumor (800) 598-4018
B.	4 Row Bleachers	BSN Sports	SKU# TR0421P 4 Row Preferred Tip N' Roll Bleachers - 21'L x 30"H x 81"D - Seats 56 - Wt. 524 lbs	6 ea.	Anodized Aluminum	BSN Sports Dallas, TX 1-800-856-3488
C.	Baseball Pitcher's Rubber	Sportsfield Specialties	LGBBPB Schutt Hollywood MLB Official	1 ea.	White	Sportsfield Specialties Alex Fletcher (408) 659-6055
D.	Softball Pitcher's Rubber	Sportsfield Specialties	LGTURFBASEPR	1 ea.	White	Sportsfield Specialties Alex Fletcher (408) 659-6055
E.	Baseball/Softball Bases	Sportsfield Specialties	LGTURFBASE	1 sets	White	Sportsfield Specialties Alex Fletcher (408) 659-6055
F.	Baseball/Softball Home Plates	Sportsfield Specialties	LGSHP-UM Schutt Hollywood MLB Pro Style	1 ea.	White	Sportsfield Specialties Alex Fletcher (408) 659-6055
G.	Foul Pole Sets	Sportsfield Specialties	FPW420	2 ea.	Yellow	Sportsfield Specialties Alex Fletcher (408) 659-6055
H.	Basezone Field Wall Padding	Sportsfield Specialties	BFWPZ-NSS	Per Plan	Wall Mounted	Sportsfield Specialties Alex Fletcher (408) 659-6055

DSA BACK CHECK SUBMITTAL TECHNICAL SPECIFICATIONS
08/11/2022

ITEM	DESCRIPTION	MANUFACTURER	MODEL NO.	QTY.	FINISH/COLOR	DISTRIBUTOR/CONTACT
I.	Batting Cage Netting	Sportsfield Specialties	BSSN60	TBD	Black	Sportsfield Specialties Alex Fletcher (408) 659-6055
J.	Netted Hood	Sportsfield Specialties	BSSNU C-1-3/4"	2 ea.	Black	Sportsfield Specialties Alex Fletcher (408) 659-6055
K.	Barrier Netting System	Sportsfield Specialties	TFBSS420P-SG StormGuard Ball Netting System	1 ea.	Black Netting and Posts	Sportsfield Specialties Alex Fletcher (408) 659-6055
L.	Scorer's Table	Sportsfield Specialties	ST8 Custom – Panel to read: "Johnson High School"	2 ea.	TBD	Sportsfield Specialties Alex Fletcher (408) 659-6055
M.	Flag Pole	Concord American Flagpole	IRW25D61- TBD	1 ea.	TBD	Concord American Flagpole 800-527-3902
N.	Drinking Fountain w/ Jug Filler (ADA left)	Most Dependable Fountains	440 SMFA	4 ea.	Textured Burgundy	Most Dependable Fountain (800) 552-6331
O.	Drinking Fountain (wall mount)	Most Dependable Fountains	440 WM w/ recessed hose bib	4 ea.	Textured Burgundy	Most Dependable Fountain (800) 552-6331
P.	Two-Tier Team Benches	Sportsfield Specialties	LG-TTPY-08	4 ea.	Textured Burgundy	Sportsfield Specialties Alex Fletcher (408) 659-6055
Q.	Scoreboard (1 baseball & 1 softball)	Nevco	Model 1608 (1608-ETN-W) with Ad Board & MPCX2 Controller	2 ea.	TBD	Steve Warner (916) 716-4201
R.	Outfield Distance Banners	BSN Sports	SKU#1079647 BSN Sports 38" x 56" Banner w/ 24" Numbers	Per plan	TBD	BSN Sports Dallas, TX 1-800-856-3488
S.	Fence Cap	Aer-Flo, Inc.	PlastiCap	Per Plans	Yellow Black	Aer-Flo, Inc., Bradenton, FL 1-800-823-7356
T.	Guard Rail System	GRS42, 42' L section	GRS42, 42' L section	4	Custom size Color: TBD	Sportsfield Specialties Alex Fletcher (408) 659-6055
U.	Bat Rack	Sportsfield Specialties	LG-SE-BR-BP-15	4 ea.	Powder Coat Black	Sportsfield Specialties Alex Fletcher (408) 659-6055
V.	Bat and Helmet Cubby	Sportsfield Specialties	LG-HC-TP	4 ea.	Powder Coat Black	Sportsfield Specialties Alex Fletcher (408) 659-6055
W.	Golf Mats	Synthetic Turf International	EZTee Tee Hitting Mats Synthetic Turf (5'x5')	Per plans	Green	Synthetic Turf International 1-800-405-7455
X.	Golf Ball Containers	Range Servant America	ODA0015 Rubber Golf Ball Tray	Per plans	Black	Range Servant America 1-800-878-8050
Y.	Golf Netting	SportsField Specialties	#18 Knotted Nylon Netting 7/8" Square Mesh	Per plans	Black	Sportsfield Specialties Alex Fletcher (408) 659-6055
Z.	Golf Cups with Sleeve	FieldTurf	FieldTurf	Per plans.	TBD	

END OF SECTION

SECTION 32 80 00

IRRIGATION

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Landscape irrigation system work is shown on the Drawings including, but not necessarily limited to, the following:
 - 1. Water supply to irrigation system.
 - 2. Water backflow prevention and flow sensing system.
 - 3. Automatic irrigation controls and systems.
 - 4. Line voltage connections to the irrigation controllers and low voltage control wiring from controllers to master valve, flow sensor, hydrometer, remote control valves.

- B. Work Included Under Other Sections:
 - 1. Irrigation water stub-out.
 - 2. 120 Volt A.C. electrical stub-out for irrigation controller.
 - 3. Irrigation sleeves.

- C. Related Requirements:
 - 1. Section 31 01 90 - Landscape and Site Maintenance
 - 2. Section 31 23 00 - Excavation and Fill
 - 3. Section 32 90 00 - Planting
 - 4. Section 33 11 00 - Domestic Water Utilities

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. D1785 - Standard Specifications for (PVC) Plastic Pipe, Schedules 40 and 80.
 - 2. D2241 - Standard Specifications for PVC Pressure-Rated Pipe (SDR Series).
 - 3. D2564 - Standard Specifications for Solvent Cements for (PVC) Plastic Pipe and Fittings.
 - 4. F2768 - Standard Specification for Modified Stub ACME Thread Joint with Elastomeric Seal in Plastic Piping Components.
 - 5. D2855 - Standard Practice for the Two-Step (Primer and Solvent Cement) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets.
 - 6. F512 - Standard Specification for Smooth-Wall Poly (Vinyl Chloride) (PVC) Conduit and Fittings for Underground Installation.
 - 7. D2672 - Standard Specification for Joints for IPS PVC Pipe Using Solvent Cement.

- B. National Sanitation Foundation (NSF), requirements for Seal of Approval.

- C. Plastics Pipe Institute (PPI), recommendations for hydrostatic design stresses for PVC pipe.

- D. State of California, Business and Transportation Agency, Department of Transportation (Caltrans) "Standard Specifications."

- E. Permits and Fees: Contractor is responsible to obtain all required permits and pay all associated fees unless otherwise noted.

- F. Irrigation Association/American Society of Irrigation Consultants, Landscape Irrigation Best Management Practices, 2014 edition.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Substitutions for specified products shall be submitted for approval in accordance with Section 01 25 00 – Substitution Procedures.
- B. Submittal Procedures: Action and Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.
- C. Coordination, Sequencing, and Scheduling:
 - 1. Contractor shall be solely responsible for coordinating, sequencing and scheduling work with applicable trades and subcontractors so as to ensure proper and timely installation of the irrigation system.
 - 2. The entire irrigation system shall be under full automatic operations for a period of two days prior to beginning of planting. Coordinate with Section 32 90 00 – Planting.
- D. Permits and Fees: Contractor is responsible to obtain all required permits and pay all associated fees unless otherwise noted.

1.04 ACTION SUBMITTALS

- A. Shop Drawings: A diagrammatic drawing of proposed mainline route and equipment locations for approval by the Owner's Representative. The Drawings may be marked and used for marking layout and equipment locations.
- B. Product Data: Manufacturer's literature or cut sheets of products specified and to be incorporated into the irrigation system. Specific products being submitted shall be highlighted or shown on boxes on cut sheets to designate which items are being submitted. Submittals not marked appropriately will be rejected.
- C. Materials List: Prior to installation, submit a materials list. Include manufacturer, model number, and description of all materials and equipment. List shall also include sealants, cements, lubricants and other proprietary items.

1.05 CLOSEOUT SUBMITTALS

- A. Record Drawings as specified.
- B. Maintenance equipment as specified.
- C. Warranties and Guarantees

1.06 RECORD DOCUMENTS

- A. Comply with Section 01 78 39 – Project Record Documents.
- B. Accurately record locations of all piping and equipment that varies from what is shown on the Drawings. Locations are to be clearly dimensioned horizontally to within 1 foot and vertically to within 0.5 feet from a hardscape edge or permanent site feature.
 - 1. The valve size, station number and gallons per minute shall be legible at each valve and shall match how the controller is wired.
 - 2. Additionally, each valve shall be annotated to describe which type of irrigation it is; rotor, rotator, spray, bubbler, drip tubing or other.
 - 3. Symbols for valves shall be annotated as: meter (M), backflow preventer device (BFP), master valve (MV), flow sensor (FS), hydrometer (H), quick coupler valve (QCV).

- C. Contractor shall record and scan and submit PDF files of full size plan set of Record Drawings (As-builts Drawings) to the Owner's representative, and two sets of color coded plans shall be produced, one for placement at or within the irrigation controller cabinet reduced to 11" x 17", and one full size set for submittal to the Owner or stored at another location selected by the Owner's Representative.
 - 1. Both sets shall have all the irrigation valve zone lateral lines color-coded so as to readily distinguish between adjacent zones.
 - 2. The color-coded copies shall then be professionally laminated in minimum 5 mil clear plastic.

1.07 QUALITY ASSURANCE

- A. Unless otherwise specified, install all materials in accordance with manufacturer's details, specifications and recommendations.
- B. The Contractor shall be responsible to assure the irrigation installer personally or through an authorized and competent representative, supervises the work and retains the same supervisor on the job from commencement to completion.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Store PVC pipe in a neat and orderly manner fully supported and protected from sunlight.
- B. Equipment and materials shall be delivered, unloaded, and handled so as to protect from damage at all times.

1.09 FIELD CONDITIONS

- A. PVC shall not be cemented during wet conditions at the discretion of the Owner's Representative.
- B. Trench excavation and backfilling shall not be performed during excessively wet conditions at the discretion of the Owner's Representative.
- C. Water Supply: Connections to, or the installation of, the water supply shall be at the locations shown on the Drawings. Minor changes caused by actual site conditions shall be made at no additional expense to Owner.
- D. Discrepancies: In the event of discrepancy, immediately notify the Owner's Representative. Do not proceed with installation or irrigation components or system in areas of discrepancy until discrepancies have been resolved.

1.10 MAINTENANCE EQUIPMENT

- A. Turn-over Materials: Provide 1 each of the following to the Owner's Representative:
 - 1. One quick coupler attachment key equipped with standard thread hose bib for each 5 quick couplers installed on the project.
 - 2. One key for locking quick coupler covers for each 5 quick coupler valves installed on the project.
 - 3. One key for hose bib operation for each 5 hose bibs installed on the project.
 - 4. One set of keys to irrigation controller and other installed locking cabinets or pedestals.
- B. Full set of remaining nozzles for each rotor sprinkler.

1.11 GUARANTY

- A. Contractor: Provide Owner with a separate written guaranty for the entire irrigation system against defects in installation, workmanship and equipment, for a period of 1 year from the date of Final Acceptance.

- B. Contractor shall make necessary repairs to the system as well as to other work affected by defects in the system during guaranty period. Repairs shall be made at the Contractor's sole expense.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Use only new materials of brands shown on Drawings, specified herein or as acceptable to the Owner's Representative.

2.02 PIPE

- A. General:
 - 1. Plastic pipe shall be extruded of an improved PVC virgin pipe compound in accordance with ASTM D2672, ASTM D2241 or ASTM D1785.
 - 2. Pipe shall be marked continuously with manufacturer's name, nominal pipe size, schedule or class, PVC type and grade, National Sanitation Foundation approval, Commercial Standards designation, and date of extrusion.
- B. Plastic Pipe: Polyvinyl chloride PVC (Type I) 1120.
 - 1. Intermittent-Pressure Lateral Piping: 1120-Schedule 40 PVC plastic pipe with Schedule 40, Type 1, Grade 1, PVC solvent weld fittings.
 - 2. Constant-Pressure Mainline Piping 2 inches and Smaller: Schedule 40 with solvent weld fittings.
 - 3. Constant-Pressure Mainline Piping 2-1/2 Inches and larger: Class 200 SDR-21 or 2-1/2" to 3" Class 315 SDR-14, if requested by Owner, or C900 Class 200 DR-14, if the system is using recycled or well water.
 - 4. Constant-pressure mainline piping 4 inches and larger shall be Class 200 PVC ring-tite with IPS ductile iron fittings and mechanical restraints at all bell fittings and fittings at changes in direction.
 - 5. Constant-pressure mainline piping 3 inches and larger on systems with booster pumps shall be Class 200 PVC ring-tite with IPS ductile iron fittings and mechanical restraints at all bell fittings and fittings at changes in direction.
 - 6. If the system is operated with recycled water, PVC pipe shall be "Purple Pipe."
- C. Copper Pressure Main Line or Non-pressure Lateral Line and Fittings: Type K copper pipe with wrought copper solder joint fittings.
- D. Recycled water piping, other than PVC piping with solvent welded joints, shall be protected against movement with thrust blocks or mechanical restraints.
- E. HDPE: Pipe: PE Pipe shall be DR 11, IPS diameters, of a 4710 Bimodal Resin with a Cell Classification of 445574C per ASTM D3350 and a Slow Crack Growth Resistance, PENT, of >500 hours per ASTM F1473.
- F. HDPE piping 3" and less shall be per ASTM D3035 and pressure rated 200 psi when using a Design Factor of .63. Pipe shall be supplied in 40' to 50' straight lengths or may be supplied in coils which must be straightened and re-rounded by the contractor prior to use.
- G. HDPE piping 3" and larger shall be per ASTM F714 or ASTM D3035 and pressure rated 200 psi when using a Design Factor of .63. Pipe shall be supplied in 40' to 50' straight lengths.

2.03 FITTINGS

- A. PVC Fittings: Polyvinyl chloride (Type I) plastic 1120, Schedule 40 or Schedule 80 where noted on the Drawings.

- B. PVC Nipples: Polyvinyl chloride (Type I) plastic 1120, Schedule 80.
- C. Brass Pipe and Fittings:
 - 1. Where indicated on the Drawings, use red brass screwed pipe conforming to Federal Specification #WW-P-351.
 - 2. Fittings shall be red brass conforming to Federal Specification #WW-P-460.
- D. PVC fittings used with UVR pipe shall be Schedule 40 UVR PVC type.
- E. Mechanical Joint Restraints:
 - 1. Where specified, use LB-series for pipe-to-pipe joints, and LG-series fittings for joints with gate valves
 - 2. Fittings available from Leemco, Inc. Piping Solutions, or equal.

2.04 SWING JOINTS

- A. Swing joints for Rotator and pop-up heads shall be as detailed on the Drawings.
- B. Swing Joints for rotors shall be by LASCO Fittings, Inc. with ASTM F2768 Standard for Swing Joint ACME Threads, or equal.
- C. Swing Joints for Water Cannons shall be Ductile Iron by The Harrington Corporation (HARCO) or approved equal.

2.05 BACKFLOW PREVENTER

- A. Device: As specified on Drawings.
 - 1. If the system is using recycled water, label all potable water backflow preventers with tags or labels reading: "potable water" in black letters on blue background, per details.
- B. Enclosure: Low profile, vandal-resistant; "Strongbox" Model series SBBC-CR powder coated cold-rolled steel or stainless steel Model series SBBC-SS by V.I.T. Products, Inc., or equal.
 - 1. Enclosure size to be verified with size of installed backflow device by Contractor.
- C. Insulation Blanket: "WeatherGuard Blanket" by Best Choice USA, or equal.

2.06 VALVES AND SENSORS

- A. General:
 - 1. Each valve shall be installed with unions before and after the valve.
 - 2. Control Valves shall be labeled with tags denoting the associated controllers and station numbers.
 - 3. Gate Valves and Ball Valves:
 - a. Valves shall have a minimum working pressure of not less than 150 psi and shall conform to AWWA standards.
 - b. Provide purple tags on all valves if system is designed for recycled water.
- B. Master Valve: As specified on Drawings.
- C. Flow Sensors: As specified on Drawings.
 - 1. Flow Sensor wiring conduit shall be Schedule 80 grey PVC electrical conduit complying with ASTM F512, size as required.
- D. Gate Valves and Ball Valves: As specified on Drawings.
- E. Remote Control Valves: As specified on Drawings.

- F. Quick Coupling Valves: As specified on Drawings. Provide purple lid if system is designed for recycled water.
- G. Drain Valves:
 - 1. Drain Valves shall be 2" Nibco T113 or approved equal.
- H. Isolation Valves for Air/Vacuum Relief
 - 1. Isolation valves for air/vacuum relief shall be bronze ball valves.

2.07 PLASTIC VALVE BOXES

- A. General:
 - 1. Color of plastic boxes shall be green, unless the irrigation system is designed for recycled water, in which case boxes shall be purple.
 - 2. If black or green valve boxes are required by the Owner for use on recycled water systems, the lids shall be purple or shall have a warning label or nameplate permanently molded into or attached onto the lid with rivets, screws, or bolts.
 - 3. Warning labels shall be as specified on Drawings.
 - 4. Valve boxes shall have locking or bolt down type lids.
 - 5. Markings on valve box covers shall be "heat branded" onto the cover in 1-inch high letters.
 - 6. Manufacturer: Carson Industries as specified and the basis of design, Applied Engineering Inc., NDS, Christy, or equal.
- B. Master Valve, Rectangular:
 - 1. Valves 1 inch and 1-1/2 inches: Model equivalent to Carson 1419-12 with 1419-T locking lid.
 - 2. Valves 2 inches and larger: Model equivalent to Carson 1730-24 with 1730T locking lid.
 - 3. Boxes shall be labeled as "Irrigation - MV" on lid.
- C. Flow Sensor, Rectangular:
 - 1. Sensors up to 4 inches: Model equivalent to Carson 1419-12 with 1419-T locking lid.
 - 2. Boxes shall be labeled as "Irrigation - FS" on lid.
- D. Ball Valves and Ball Valves, Round:
 - 1. Model equivalent to Carson 910-10 with 910-T locking lid.
 - 2. Boxes shall be labeled as "Irrigation - BV" on lid.
- E. Gate Valves and Ball Valves, Round:
 - 1. Model equivalent to Carson 910-10 with 910-T locking lid.
 - 2. Boxes shall be labeled as "Irrigation - GV" on lid.
- F. Remote Control Valves, Rectangular:
 - 1. Valves 1 inch and 1-1/2 inches: Model equivalent to Carson 1419-12 with 1419-T locking lid.
 - 2. Valves 2 inches and larger: Model equivalent to Carson 1730-12 with 1730-T locking lid.
 - 3. Boxes shall be labeled as "Irrigation - RCV" on lid.
- G. Quick Coupling Valves, Round:
 - 1. Model equivalent to Carson 910-10 with 910-T locking lid.
 - 2. Boxes shall be labeled as "Irrigation - QC" on lid.
- H. Valve Boxes shall have locking or bolt down type lids. Approved box manufactures as equals: Applied Engineering Inc., NDS, Christy, Carson Industries, or equal.

2.08 CONCRETE VALVE BOXES

- A. General:

1. Manufacturer: Christy as specified and the basis of design, or equal.
 2. Valve Boxes shall have bolt down type lids with locking where specified.
- B. Master Valve, Rectangular:
1. Valves 1" and 1 1/2": Model equivalent to Christy N16 with N16T bolt down lid.
 2. Valves 2" and 3": Model equivalent to Christy N36 with N36T bolt down lid.
 3. Boxes shall be labeled as "Irrigation - MV" on lid.
- C. Flow Sensor, Rectangular:
1. Sensors up to 3 Inches: Model equivalent to Christy N16 with N16T bolt down lid.
 2. Sensors 4 inches and Larger: Model equivalent to Christy N36 with N36T bolt down lid.
 3. Boxes shall be labeled "Irrigation - FS" on lid.
- D. Gate Valves and Ball Valves:
1. Valves 1-2 Inches: Christy model N09 box with N9T locking lid and N99HHB-2 bolts.
 2. Valves 2-1/2 Inches and Larger: Christy model N12 box with N9T lid and N99HHB-2 bolts, or equal.
 3. Boxes shall be labeled as "Irrigation - Valve" on lid.
- E. Remote Control Valves:
1. Valves 1 and 1-1/2 Inches: Christy model N16 with N16T bolt down lid.
 2. Valves 2 inches and larger: Christy model N36 with N36T bolt down lid, or equal.
 3. Boxes shall be labeled as "Irrigation - RCV" on lid.
- F. Quick Coupling Valves, Round:
1. Model equivalent to Christy Model G05T with G05CT locking Lid.
 2. Boxes shall be labeled as "Irrigation - QC" on lid.
- G. Valve Boxes: Valve boxes shall have locking or bolt down type lids.

2.09 AUTOMATIC CONTROLLER AND ENCLOSURE

- A. Controller: Manufacturer, model, size, and type as specified on Drawings.
- B. Enclosure: Manufacturer, model, size, and type as specified on Drawings.
- C. Grounding: 5/8"x8' copper grounding rod (one per controller) including #6 solid copper ground wire.

2.10 ELECTRICAL

- A. General:
 1. Electrical equipment shall be NEMA Type 3, waterproofed for exterior installations.
 2. Electrical work shall conform to local codes and ordinances.
 3. Remote control wire shall be UL rated for direct burial.
 4. Where two or more controllers are used, the control wires shall be a different color for each controller. These colors shall be noted on the "Record Drawings" placed in the controller cabinet.
- B. Flow Sensor Wiring:
 1. As per manufacturer's details and recommendations.
 2. Flow Sensor conductors shall be installed in 1" Schedule 80 electrical conduit from controller to the Flow Sensor valve box.
 3. Control wires from controller to flow sensor: 2 #14-gauge (AWG) wire, not to exceed 2,000 feet.
 4. Splice connectors: 3M DBR-Y6 splice connectors, 3M Scotchcast #3570G-N Connector seal packs, or Spears DS-100 connectors with DS-300 sealant.

- C. Low Voltage Control Valve Wiring:
 - 1. Conductors:
 - a. Control Wires: Type UF, 14-gauge wire. Insulating jacket color shall be red.
 - b. Common Wires: Type UF, 12-gauge wire. Insulating jacket color shall be white.
 - c. Spare Control Wires: Type UF, 14-gauge wire, insulating jacket color shall be blue.
 - d. Spare Common Wire: Type UF, 12-gauge wire. Insulating jacket color shall be green.
 - 2. Splice connectors: 3M DBR-Y6 splice connectors, 3M Scotchcast #3570G-N Connector seal packs, or Spears DS-100 connectors with DS-300 sealant.

- D. Two Wire Low Voltage:
 - 1. Conductors:
 - a. Control Wires: Type UF, 14-gauge wire decoder cable (up to 10,000 feet from controller to decoder) in common Insulating jacket. Wires shall be blue and red.
 - b. Control Wires: Type UF, 12-gauge wire decoder cable (up to 15,000 feet from controller to decoder) in common Insulating jacket. Wires shall be blue and red.
 - c. Provide 36" coil of 2 wire in each valve box.
 - d. 2 wire conductors: Paige P-7354-D Rev 3 or Hunter Jacketed are to be installed in 1" schedule 80 PVC conduit.
 - 2. Splice connectors: 3M DBR-Y6 splice connectors or 3M Scotchcast #3570G-N Connector seal packs.
 - a. Maximum of four 14-gauge wires per wire nut.
 - b. Two Wire conductors shall not have any splices between controller and first decoder, or between decoders.
 - 3. Two Wire conductors shall be installed in 1" Schedule 80 electrical conduit from controller to first valve box, and between valve box to valve box.
 - 4. Grounding: 5/8"x8' copper grounding rod including #12 solid copper ground wire, to green wire on decoder. Ground rod locations, 1 every 300' or closest controller, and 1 at the end of each 2-wire conductor.
 - 5. Lightning Arrestors: Shall be type, location and installed as per plan and details, or as per decoder manufacturer's recommendation.

2.11 CONNECTING COMPOUNDS

- A. Primer: I Weld-On "P-70" Primer by IPS Corporation.

- B. Cement: Solvent cementing shall be in conformance with ASTM D2564 and ASTM D2855.
 - 1. Pipe Diameter up to 6 Inches: Weld-On #705 by IPS Corporation, Low VOC PVC solvent cement for Class 200 PVC or schedule 40 PVC.
 - 2. Pipe Diameter Larger than 6 Inches and Schedule 80 PVC: Weld-On #711 by IPS Corporation, Low VOC PVC solvent cement.
 - 3. Flexible PVC to Rigid PVC Connections: Weld-On #795 by IPS Corporation, Low VOC PVC solvent cement.

2.12 SPRINKLER HEADS

- A. Rotors, Rotators and Spray Heads: As specified on the Drawings.

- B. Install with purple rotor covers or head caps if system is designed for recycled water.

2.13 TREE AND SHRUB BUBBLERS

- A. Bubbler Nozzle Assemblies: As specified on the Drawings.

- B. Install bubblers with purple caps if system is designed for recycled water.

2.14 ADDITIONAL MATERIALS

- A. Tape:
 - 1. General:
 - a. On-site buried recycled water piping shall be identified by warning tape with a minimum width of 3 inches reading "caution – recycled water" (in black or white lettering on purple background). Tape shall run continuously on top of main line piping and shall be attached to piping with plastic tape banded around the warning tape and the pipe every 5 feet on center.
 - 2. Pipe Detection Tape: 3-inch-wide, detectable type; "Terra Tape" "Sentry Line Detectable" from Reef Industries, Inc., 713.507.4251; or equal.
 - a. Text: "Caution Water Line Buried Below."
- B. Tracer Wire: Polyethylene insulated, copperclad steel; "SoloShot XTreme Tracer Wire" by Copperhead Industries, LLC. 877-726-5644, or equal.
- C. Sleeves: Class 200 PVC. Install sleeves in locations and at the depths shown on the Drawings. Sleeves shall extend a minimum of 6 inches past the edge of the above hard surface for ease of location.
- D. Teflon Tape: Variety commonly used for wrapping threaded connections.
- E. Valve Tags: Plastic pre-labeled station tags.
- F. Drain Rock: 3/4-inch wash drain rock complying with requirement specified in Section 32 11 00 – Base Courses.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Prior to starting work, test and verify that water pressure levels meet the requirements specified on the Drawings. Notify the Owner's Representative immediately of any discrepancies.
- B. Irrigation Drawings are diagrammatic. Main lines and lateral lines shown parallel in the Drawings may be placed in a common trench, provided that a minimum horizontal distance of 3 inches is maintained between buried lines, as per Drawings.
- C. Sprinkler heads are shown schematically. Suspected discrepancies in coverage or sizes of areas to be irrigated shall be brought to the attention of the Owner's Representative prior to installation. Contractor shall re-direct work to avoid delay while awaiting resolution.

3.02 PREPARATION

- A. Contractor shall make provisions and take necessary precautions to protect existing and completed work or features.
- B. Layout:
 - 1. Prior to installation, the Contractor shall stake out all pressure supply lines, routing and location of backflow preventer, all valves, sprinkler heads, bubblers, drip tubing, and automatic controller for review by the Owner's Representative.
 - 2. Layout irrigation system and make minor adjustments required due to differences between site and Drawings. Where piping is shown on Drawings under paved areas, but running parallel and adjacent to planted areas, install the piping in the planted areas.

3.03 TRENCHING

- A. Conform to Section 31 23 00 – Excavation and Fill.
- B. Excavate trenches with vertical walls, uniform bottom, free of deleterious materials, and wide enough for pipes to lay side by side, fully supported on trench bedding. There shall be a minimum 3-inch clearance between all pipes.
 - 1. No lines shall be installed parallel to and directly over another line.
 - 2. When lines must cross, the angle shall be forty-five to ninety degrees, and a minimum of three inch (3") vertical clearance shall be maintained.
- C. Provide minimum coverage depths as follows:
 - 1. Mainline: 24 inches in landscape areas, 30 inches in sleeves under paving.
 - 2. Lateral Lines: 18 inches in landscape areas, 30 inches in sleeves under paving.
- D. Hydraulic driving methods shall not be used under paved surfaces.

3.04 PIPE INSTALLATION

- A. Comply with manufacturer's instructions as applicable.
- B. Rubber Ring Seal Joint:
 - 1. Use factory-made male end or prepare field-cut male end to exact specifications of factory-made end.
 - 2. Carefully clean bell or coupling and insert rubber ring without lubricant. Position ring carefully according to manufacturer's specifications.
 - 3. Lubricate male end according to manufacturer's instructions and insert male end to specified depth. Use hands only when inserting PVC pipe.
- C. Thrust Blocks:
 - 1. Thrust blocks shall be provided on 3 inch and 4-inch main lines where specified and as necessary to resist system pressure on, and pipe movement of, pressurized lines and fittings. Thrust blocks shall be concrete and the size shall be based on an average soil safe bearing load of 3,000 pounds per square foot.
 - 2. Form thrust blocks in such a manner such that concrete comes in contact only with the fittings, not over the fitting joint. Thrust blocks shall be between solid soil undisturbed and the fitting.
 - 3. Install thrust blocks as shown in Drawings and as described above.
 - 4. Main lines of 3 inches and 4 inches with operating pressures of 85 psi or more, and systems with a booster pump, shall have mechanical restraints at all fittings and changes of flow direction.
 - 5. Main lines 6 inches and larger shall have ductile iron fittings with joint restraints installed at all couplings and changes in flow direction.
- D. Solvent Welded Joints:
 - 1. Assemble above ground where possible.
 - 2. Cut square, ream, and thoroughly clean shavings and burs from pipe ends.
 - 3. Make joint using specified primer and cement, continuously wiping off excess.
 - 4. Allow 60 minutes of set-up time before handling and 24 hours curing before applying water pressure.
- E. Threaded Joints:
 - 1. Use Teflon tape on all pressurized, threaded plastic to plastic and plastic to metal joints.
 - 2. Hand tighten and use only light strap-type friction wrench pressure to complete.
- F. Snake pipe to provide a minimum of 1 additional foot for each 100 feet of pipe to allow for expansion and contraction.

- G. Pipe shall be installed as specified and generally as shown in Drawings.
- H. Cap or plug pipe openings as soon as pipes have been installed to prevent intrusions of debris.
- I. Sleeves:
 - 1. Install pipe sleeves where necessary, where shown and at all points where pipes pass through concrete or masonry. In footings, install sleeving that allows 1-inch minimum clearance around pipes.
 - 2. Each end of sleeve shall extend a minimum of 6 inches beyond edge of paving or structure above. Provide removable non-decaying plug or cap at each end of sleeve, to prevent earth from entering pipe.
- J. Thoroughly flush system prior to installing valves, screens and nozzles.
- K. Install pipe detection tape and tracer wire above mainline.

3.05 EQUIPMENT AND INSTALLATION

- A. Reduced Pressure Backflow Prevention Device: Install in accordance with local codes and as shown on the Drawings.
- B. Master Valve and Flow Sensors:
 - 1. Install as shown in Drawings.
 - 2. Valve boxes shall be set plumb, flush, and square with adjacent structures.
 - 3. Valves shall be installed in valve boxes to provide 2-inch clearance between the highest point of the valve and the bottom of the valve box lid.
 - 4. Install valve tags in an acceptable manner indicating valve station and controller number.
 - 5. Provide 12-inch minimum separation when valve boxes are grouped together, and align in a straight, parallel, even, and orderly manner.
 - 6. Locate all boxes a minimum of 10 feet from striping of any field of play.
 - 7. Locate valves in shrub/ground cover areas whenever possible.
- C. Gate Valves and Ball Valves:
 - 1. Install as shown on the Drawings.
 - 2. Valves shall be installed in valve boxes to provide a minimum of 2-inch clearance between the highest point of the valve and the bottom of the valve box lid.
 - 3. Valves shall not be installed in any area that is within the athletic field of play. All valves shall be located within valve boxes set 12 inches from fencing or edge bands as shown.
 - 4. Locate all boxes a minimum of 10 feet from striping of any field of play.
- D. Remote Control Valves:
 - 1. Install as shown in Drawings.
 - 2. Valve boxes shall be set plumb, flush, and square with adjacent structures.
 - 3. Valves shall be installed in valve boxes to provide 2-inch clearance between the highest point of the valve and the bottom of the valve box lid.
 - 4. Install valve tags in an acceptable manner indicating valve station and controller number.
 - 5. Provide 12-inch minimum separation when valve boxes are grouped together, and align in a straight, parallel, even, and orderly manner.
 - 6. Locate all boxes a minimum of 10 feet from striping of any field of play.
 - 7. Locate valves in shrub/ground cover areas whenever possible.
 - 8. Two Wire decoders, as specified, are to be located within the valve boxes with 36 inches of wire coil to allow for easy maintenance and reading of decoder code bar.
- E. Quick Coupler Valves:
 - 1. Install as shown on the Drawings.
 - 2. Quick coupling valves shall be installed in valve boxes to provide 2-inch clearance between the highest point of the valve cover and the bottom of the valve box lid.

3. Locate all boxes a minimum of 10 feet from striping of any field of play.
4. Quick couplers in synthetic fields shall be located against synthetic turf edgeband and curbs.

F. Controller:

1. Install as shown in Drawings.
2. Owner's Representative shall determine final approved controller locations.
3. Label cabinet door exterior with permanent, minimum 1-inch tall letter or number of controller designations corresponding with designations on the Drawings and Record Documents.
4. 120 power, pull/splice box, conduit and sweeps from power source to controller shall be provided and installed by an electrical contractor.
5. All above grade conduit shall be steel electrical conduit.
6. Affix reclaimed water warning on controller enclosure (as applicable).

G. Control Wire:

1. Install control wire along main line, or as shown in Drawings.
2. Connect control wires to controller in sequential arrangement according to identification number in the Drawings. Label each controller station with permanent non-fading labels indicating valve identification number and controlled.
3. Bundle multiple wires with tape or ties at 20-foot intervals maximum. Do not tape wires in sleeves.
4. Make all splices in control valve boxes using only specified connectors.
5. Provide 36-inch wire coil at each remote control valve and at all mainline directional changes.
6. Install 2 spare control wires and one looped spare common wire to run by, and loop into, every remote control valve box of system. Terminate wires inside controller enclosure unconnected and clearly labeled as extra.
7. All wiring under paving shall be installed in a PVC pipe sleeve large enough to allow withdrawal and insertion of individual proposed wires and room for 12 additional wires.
8. Control wire under 2,000 feet in length shall be 14 gauge.
9. If control wire run is over 2,000 feet, shall be 12 gauge.
10. Two Wire decoder cable up to 10,000 feet from controller to decoder shall be 14 gauge.
11. Two Wire decoder cable over 10,000 and up to 15,000 feet from controller to decoder shall be 12 gauge.
12. Distance between Two Wire Decoder and Solenoid shall be in accordance with manufacturer's specifications.
13. Install terminus ends of two wire cable with 36-inch loop in 8-inch round valve box and record location of each box on the Record Drawings.
14. Install Two Wire Lightning Diffusers per manufacturer's details and recommendations.

H. Rotor, rotator and Spray Heads:

1. Install as shown in Drawings.
2. Install plumb with finish grade.
3. Thoroughly flush all lines prior to installing nozzles.

I. Tree Bubbler Assemblies:

1. Install in perforated pipe sump as shown on the Drawings.
2. Coordinate installation with planting operations to ensure timely and proper placement of heads.

J. Shrub Bubbler Assemblies

1. Install as shown on the Drawings.

3.06 FIELD QUALITY CONTROL

A. General:

1. Notify Owner's Representative for the following reviews, with minimum 2 working days' notice:
 - a. Pressure testing mains prior to installing heads.
 - b. Coverage test prior to planting turf shrubs and or groundcover.
 - c. Pre-maintenance observation prior to acceptance of installed irrigation system.

- d. Final observation prior to release of project to Owner.
 2. Contractor shall provide all equipment and personnel required to conduct tests.
 3. Provide up-to-date Project Record Drawings at each review.
 4. If Owner's Representative is called out for review prior to the system being ready as specified, the contractor shall be back charged for the full cost of the review time, report, and travel.
- B. Pressure Tests:
1. Testing shall occur with trenches open. Small amounts of backfill between fittings shall be allowed to prevent pipe displacement. All fittings shall be visible prior to testing.
 2. Test all pressure supply lines under a minimum hydrostatic pressure of 125 psi. Pipe shall hold pressure for a period of 6 consecutive hours with no more than 5 psi loss in order to pass test.
 3. Lateral lines shall be tested under full line pressure for a period of 1 hour prior to backfilling. Cap all heads and center load pipe between fittings prior to testing.
 4. Correct all deficiencies revealed by tests to the satisfaction of the Owner's Representative.
- C. System Flushing:
1. After lateral lines, swing joints and sprinkler heads are in place and connected, and prior to installation of sprinkler nozzles, thoroughly flush all lines with water to completely clean lines of debris.
 2. Install sprinkler filters and nozzles only after lines have been flushed to the satisfaction of the Owner's Representative.
- D. Coverage Tests:
1. Perform coverage tests after systems are completed and operational, after finish grading as specified in Section 32 90 00 - Planting has been completed, but prior to any planting, in the presence of the Owner's Representative.
 2. Correct all deficiencies to the satisfaction of the Owner's Representative prior to planting.
 3. No overspray or runoff of recycled water is allowed on any non-approved use area.

3.07 BACKFILLING

- A. General:
1. Backfill only after specified tests have been performed and accepted.
 2. Clean trenches of debris and deleterious material before backfilling.
 3. Backfill as shown on the Drawings with native material granular in nature and free from deleterious material rocks and clods 2" or larger.
 4. Install pipe detection tape over entire run of mainline as shown in Drawings.
 5. Compact trenching to 95 percent relative density under pavement and 85 percent relative density within planting areas.
 6. Dress off and compact trench surfaces with finish grade in a manner to ensure no settling of trenches will occur. If settling occurs, contractor is to bring in additional topsoil, recompact and grade to be flush with adjacent finish grade.
 7. Comply with additional requirements specified in Section 31 23 00 – Excavation and Fill.

3.08 ADJUSTING

- A. Adjust and balance system to eliminate overspray, fogging or misting and as directed by Owner's Representative.

3.09 DEMONSTRATION

- A. Instruct Owner's personnel in complete and proper operation and maintenance of system prior to Final Acceptance.

3.10 MAINTENANCE

- A. Contractor shall service and maintain irrigation system during specified Landscape Maintenance Period as specified in Section 31 01 90 - Landscape and Site Maintenance.
- B. The entire irrigation system shall be under fully accepted automatic operations for a period of 2 days prior to commencement of planting.
- C. Final Acceptance and start of guaranty period shall occur no later than the end of the specified Landscape Maintenance Period.

3.11 FINAL REVIEW

- A. Provide Owner's Representative with Record Documents and other specified closeout submittals prior to Final Review.

END OF SECTION

SECTION 32 90 00

PLANTING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Landscaping as shown on the Drawings including, but not be limited to the following:
 - 1. Soil preparation.
 - 2. Fine grading of landscape areas.
 - 3. Turf planting.
 - 4. Plant material.
 - 5. Turf Establishment Period.
 - 6. Landscape Maintenance Period.
- B. Related Requirements:
 - 1. Section 02 41 13 – Site Clearing and Demolition.
 - 2. Section 31 01 90 – Landscape and Site Maintenance.
 - 3. Section 32 80 00 – Irrigation.

1.02 REFERENCES

- A. American Joint Committee on Horticulture Nomenclature (AJCHN): Standardized Plant Names.
- B. American Association of Nurserymen, Inc. (AAN): American Standard for Nursery Stock.
- C. Sunset Western Garden Book, Lane Publishing Company.
- D. Agricultural Code of California.
- E. State of California, Business and Transportation Agency, Department of Transportation (Caltrans) "Standard Specifications."

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action and Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.
- B. Coordination:
 - 1. Irrigation and drainage systems shall be inspected and tested before start of any Work of this Section. Before covering subsurface drains and any subsurface drainage weeps, Contractor shall inspect and be responsible for their performance.

1.04 ACTION SUBMITTALS

- A. Plant Materials and Products:
 - 1. Thirty days prior to planting, submit 4 copies of documentation that plants specified have been ordered. Include names and addresses of suppliers.
 - 2. Substitutions: If substitutions are required, they shall be brought to the attention of the Owner's Representative, at time of submittal. Refer to Section 01 25 00 – Substitution Procedures for additional requirements.
- B. Product Data:

1. Manufacturer's descriptive literature for products proposed for use.
2. Certified chemical analysis of the following:
 - a. Fertilizers.
 - b. Herbicides.
- C. Samples: Submit 4 samples of the following in minimum 1-quart size "zip-lock" plastic bag:
 1. Soil amendment. Include current evaluation and sieve analysis.
 2. Bark mulch top dress.
 3. Topsoil, as applicable. Include current fertility and structure analyses.

1.05 QUALITY ASSURANCE

- A. Regulatory Requirements:
 1. Perform work in accordance with all applicable laws, codes, and regulation required by authorities having jurisdiction over such work and provide for all review and permits required by Federal, State, and local authorities in furnishing, transporting, and installing materials.
 2. Certificates of review required by law for transportation shall accompany invoice for each shipment of plants. File copies of certificates with the Owner's Representative after acceptance of material. Review by Federal or State governments at place of growth does not preclude rejection of plants at project site.
 3. Control of Work: Comply with Section 5 of the Standard Specifications.
 4. Control of Materials: Comply with Section 6 of the Standard Specifications.
- B. Contractor shall employ on-site supervisor at all times during execution of the planting. Supervisor shall be thoroughly familiar and experienced with the materials and products being installed and proper methods of their installation. Notify the Owner's Representative immediately of changes in supervisory personnel.
- C. Products and materials shall be new, first quality, and acceptable to the Owner's Representative.
- D. Tree, Shrubs and Plants: Provide trees, shrubs and plants of quantity, size, genus, species and variety shown and scheduled for landscape work and complying with recommendations and requirements of ANSI Z60.1 "American Standard for Nursery Stock." Provide healthy, vigorous stock, grown in a recognized nursery in accordance with good horticultural practice and free of disease, insects, larvae, and other defects such as girdling or bound roots, knots, sunscald, injuries, abrasions, and disfigurement.
- E. Analysis and Standards: Package standard products with manufacturers certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable.
- F. Quality Review: The Owner's Representative will review trees and shrubs before planting for compliance with specified requirements for genus, species, variety, size and quantity. Owner's Representative retains right to further review trees and shrubs for size and condition of root systems, trunks, stems branches or structure, buds, and other required features, and to disqualify unsatisfactory or defective material at any time during the progress of work. Remove disqualified trees or shrubs immediately from project site and replace with materials acceptable to Owner's Representative.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. General:
 1. Ship plant material and seed with certificates of inspection required by governing authorities. Comply with regulations applicable to plant materials.
 2. Handle and store all products of this Section in such a manner as to protect them from damage at all times.
 3. Storage of products on-site shall be coordinated by the contractor in an orderly manner so as not to unnecessarily impede the work or reasonable use of project site.

- B. Plants:
 - 1. Delivery: Coordinate with Owner's Representative. Provide proper identification for landscape labor force and vehicles at all times while on site.
 - 2. Storage: Coordinate with Owner's Representative. Provide exposure as required by plant variety and provide wind protection for all plants. Water regularly to maintain thorough moisture in root zone. Temporary, automatic irrigation system will be required at discretion of Owner's Representative if extended storage period becomes necessary. Protect dark colored plant containers from direct exposure to the sun.
 - 3. Labeling: At least one plant of each variety or type shall be legibly labeled at all times clearly indicating correct plant name as indicated on Drawings. Labels shall be durable with waterproof ink.
- C. Fertilizers:
 - 1. Deliver in original, unopened containers with original labels intact and legible which state the guaranteed chemical analysis.
 - 2. Fertilizer, lime, soil sterilant, and all other potentially toxic products shall not be stored with any other landscape materials.
- D. Bulk Material:
 - 1. Coordinate delivery and storage of bulk material with Owner's Representative.
 - 2. Confine materials to neat piles in areas acceptable to the Owner's Representative.

1.07 FIELD CONDITIONS

- A. Planting operations shall not be conducted under the following conditions, subject to the discretion of the Owner's Representative:
 - 1. Freezing weather.
 - 2. Excessive heat.
 - 3. High winds.
 - 4. Excessively wet conditions.

1.08 WARRANTY

- A. Contractor shall warrant work executed and all materials provided or used under this Section shall be free of defects and poor workmanship for a period of 1 year after Final Acceptance.
- B. Contractor shall warrant plant materials shall be in a healthy and thriving condition 1 year after Final Acceptance, unless it can be proven that the unhealthy or non-thriving material is due to causes other than the Contractor's materials or workmanship.
 - 1. Replace dead plants and plants not in vigorous condition immediately upon notification by Owner's Representative during Warranty Period.
 - 2. Replaced plants shall be subsequently guaranteed by the Contractor for an additional year following date of replacement.
 - 3. Repair defective materials and work shall be acceptable to the Owner's Representative.

1.09 TURF ESTABLISHMENT PERIOD

- A. Turf Establishment period shall include complete rooting of turf and at least 2 mowings as specified herein, prior to the commencement of the specified Landscape Maintenance Period.

1.10 MAINTENANCE PERIOD

- A. Refer to Section 31 01 90 - Landscape and Site Maintenance for information.

PART 2 - PRODUCTS

2.01 TOPSOIL

- A. Topsoil shall be clean on-site material that has been previously stripped from the top 6 inches of original grade or import material as applicable. Acceptable topsoil shall be free from rocks, stones, rubble, and clay clods over 1.5 inches in diameter, roots, toxins, and other deleterious materials.
- B. Imported topsoil shall have an agricultural suitability test by a qualified soils laboratory, dated within 30 days of purchase.
 - 1. Submit samples and current soil fertility and structure analyses in the quantity specified.

2.02 FERTILIZERS

- A. General:
 - 1. Fertilizers shall be of an acceptable brand with a guaranteed chemical analysis as required by USDA regulations.
 - 2. Fertilizers shall be dry and (except plant tabs) free flowing.
- B. Pre-Plant Fertilizer: Shall be of the following chemical analysis:

Nitrogen:	6 percent.
Phosphoric Acid:	20 percent
Soluble Potash:	20 percent
- C. Post-Plant Fertilizer: Shall be of the following chemical analysis:

Nitrogen:	16 percent
Phosphoric Acid:	6 percent
Soluble Potash:	8 percent
- D. Plant Tabs: 7-gram tabs designed for 12-month slow release with the following chemical analysis by weight; "Gro-Power" or equal:

Nitrogen:	12 percent
Phosphoric Acid:	8 percent
Soluble Potash:	8 percent
Humus:	20 percent
Humic Acid:	4 percent
Sulfur:	3.5 percent
Iron:	2 percent
Micronutrients	

2.03 SOIL ADDITIVES

- A. Soil Amendments: Organic Humus Compost
 - 1. Fully composted aerobic humus compost without presence of decomposition products. The organic matter content shall be at least 50% on a dry weight basis. Humus material shall have an acid-soluble ash content of no less than 6% and no more than 20%.
 - 2. The pH of the material shall be between 6% and 7.5%.
 - 3. The salt content shall be less than 10 millimho/cm @ 25° C in a saturated paste extract.
 - 4. Boron content of the saturated extract shall be less than 1.0 parts per million.
 - 5. Silicon content (acid-insoluble ash) shall be less than 50%.
 - 6. Calcium carbonate shall not be present if to be applied on alkaline soils.
 - 7. Types of acceptable products are composts, manures, mushroom composts, straw, alfalfa, peat mosses etc. low in salts, low in heavy metals, free from weed seeds, free of pathogens and other deleterious materials.

8. Composted wood products are conditionally acceptable [stable humus must be present]. Wood based products are not acceptable which are based on red wood or cedar.
9. Sludge-based materials are not acceptable.
10. Carbon:nitrogen ratio is less than 25:1.
11. The compost shall be aerobic without malodorous presence of decomposition products
12. The maximum particle size shall be 0.5 inch, 80% or more shall pass a No. 4 screen for soil amending.
13. Maximum total permissible pollutant concentrations in amendment in parts per million on a dry weight basis:

Arsenic	20	Lead	200	Silver	10
Cadmium	15	Mercury	10	Vanadium	500
Chromium	300	Molybdenum	20	Zinc	200
Cobalt	50	Nickel	100		
Copper	100	Selenium	50		

14. Soil Amendments for consideration are listed below:

- a. Soil Amendment: "Super Humus" Compost available from BFI Organics Inc., 1995 Oakland Road, San Jose, CA, 408-262-1401;
 - b. "Organic Compost" available from Z-Best Products Inc. 705 Los Esteros Road, San Jose CA, 408-934-6152;
- B. Soil Conditioner: 4 percent sulfur; "Gro-Power Plus (5-3-1) by Gro-Power Inc., 800-473-1307, or equal.
 - C. Soil Sulphur: Agricultural grade, 99 percent pure, pelletized or granular form, not powdered.
 - D. Iron Sulphate: Non-staining iron with micro-nutrients, soil penetrant, trace minerals, and humic acids; "Gro-Power Premium Green" by Gro-Power Inc., 800-473-1307, or equal.

2.04 BIORETENTION SOIL MIX

- A. Bioretention soil mixture in rain gardens shall have the following general characteristics:
 1. Properties of bioretention soil mix:
 - a. Consisting of the following mixture, measured by volume:
 - 1) 60-70% Compost
 - 2) 30-40% Sand
 - b. Supportive of vigorous plant growth
 - c. Able to achieve a long-term, in-place infiltration rate of at least 5 in/hr. and no more than 10 in/hr.
 2. Supplier: Biotreatment soil mix' by TMT Enterprises. Contact: Matt Moore (408) 432-9040

2.05 MULCH TOP DRESS

- A. Material: Medium-sized, 3/4 inch to 2 inches, decorative chipped wood, homogenous in appearance, free of deleterious and inorganic material, sticks, shredded, stringy, and fibrous materials; "Golden Nuggets" from Sun Up, 800-222-255; "MBC Red" from My Bark Company, Inc., 209-786-4042; or equal.

2.06 PLANTS

- A. General:

1. Plants shall conform to the species and minimum sizes shown on the Drawings.
2. Quantities shown on the Drawings are for the Contractors convenience only. Contractor shall provide plant material to fulfill the intent of the Planting Plan at the discretion of the Owner's Representative.

B. Condition: Plants shall conform to the following minimum requirements:

1. Nursery grown unless otherwise specified.
2. Supplied in appropriate container, balled and burlapped, or bare root as specified on Drawings.

2.07 SEED MIXES

A. Seed mixes and seed from which sod was grown shall be, or shall have been:

1. From current or latest seasons crop.
2. Free of all noxious weed seed and have producers "Statement of Analysis Guarantee."
3. Kentucky Blue varieties shall be 97 percent pure and 85 percent germination.
4. 98 percent pure by weight with a 90 percent germination rate.
5. Weed seed shall be less than .25%
6. Labeled in conformance to State and U.S.D.A. laws and regulations.

B. Mix: Turf seed mix subject to acceptance by the District's Representative, shall be as follows:

1. Sports Field Turf: "Sportsclub 60/40 Tournament Blue/Rye Mix" from Pacific Coast Seed, Inc., 800-733-3462, or equal, in the following percentages and applied at a rate of 305 pounds per acre:

Percentage	Grass
20%	Kentucky Blue – Midnight
20%	Kentucky Blue – Bedazzle
20%	Kentucky Blue – Waterworks
13.3%	Perennial Rye – Academy III
13.3%	Perennial Rye – Apple SGL
13.3%	Perennial Rye – Blackstone

2. Native Grass and Wildflower Mix: The following applied in pounds per acre:

Pounds per Acre	Product
30	Festuca rubra, Molate Red Fescue
20	Festuca idahoensis, Idaho Fescue - Sonoma County Source
20	Festuca occidentalis, Western Fescue
1.5	Eschscholzia californica – Alameda County California Poppy
1.5	Lasthenia glabrata – Goldfields
3	Lupinus nanus - Sky Lupine
1.25	Clarkia bottae – Showy Clarkia
0.25	Castilleja exerta – Purple Owls Clover
1.5	Collinsia heterophylla – Chinese Houses
Note: Add 6 pounds of Vulpia microstachys or 20 pounds of Regreen per acre if erosion control is to be accomplished primarily through the growth of winter germinating plants.	

3. Quality:
 - a. Seed shall be in conformance with the California State Seed Law of the Department of Agriculture.
 - b. Each seed bag shall be delivered to the site sealed and clearly marked as to species, purity, percent germination, dealer's guarantee and dates of test. Prior to seeding at the request of Owner Representative, the contractor shall provide a letter of certification, original Association of Official Seed Analysts (AOSA) seed test results.
4. Mix Source: Pacific Coast Seed, Inc., 800-733-3462, or equal.

2.08 TURF SOD

- A. Harvest and Delivery:
 1. Harvest from source and deliver to project site within 24 hours.
 - a. Deliver only as much sod as can be installed in one day's work.
 - b. Sod not transplanted within this time period shall be reviewed prior to installation.
 2. Comply with requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in Turfgrass Producers International's (TPI) "Guideline Specifications to Turfgrass Sodding."
 3. Protect sod from breakage and drying.
- B. Sod shall be as follows:
 1. Tiffway II Hybrid Bermuda
 2. Sod shall have a 3/4inch cut or thickness.
 3. Sod shall be large roll cut.
 4. Sod shall have a peat or sand / peat base.
- C. Source: Delta Bluegrass, West Coast Turf, Pacific Sod, or equal.

2.09 HERBICIDES

- A. Pre-Emergent: "Ronstar-G" pelletized, "Surflan" liquid, or equal.
- B. Other Herbicides: Submit for review and accepted by Owner's Representative prior to use.

2.10 ADDITIONAL MATERIALS

- A. Water: Clean, fresh, and free of substances or matter which could inhibit vigorous growth of plants.
- B. General: Products and materials shall be new, first quality as acceptable to the Owner's Representative.
- C. Header Board: As shown and specified on the Drawings.
- D. Root Barriers: Model #UB 24-2 "Universal Barrier" by Deep Root Partners L.P, 800-458-7668, or equal.
- E. Weed Barrier: "Pro Weed Barrier" Model 24003080 DeWitt Co., Sikeston MO, 800-888-9669, or equal.
 - 1. Roll Size: 12 feet by 250 feet.
 - 2. Anchorage: 8 inch jute staples.

PART 3 - EXECUTION

3.01 TOPSOIL INSTALLATION

- A. Subgrade soil shall be cut or filled to the depth required such that after placement of required amount of topsoil and specified preparation procedures have been accomplished, specified finish grades will be attained.
- B. Subgrade soil shall be cross-ripped as specified.
- C. Planting areas shall contain a minimum of 6 inches of acceptable topsoil applied as applicable and where required. Only previously accepted topsoil shall be installed.
- D. Refer to Section 31 20 00 – Earth Moving for rough grading information.

3.02 PREPARATION

- A. Make provisions and take necessary precautions to protect existing and new improvements from damage during execution of planting work.
- B. Initial Preparations:
 - 1. Prior to beginning of planting, thoroughly cross-rip, with second rip shall be performed at 90 degrees to first rip, planting area soil to a depth of twelve 12 inches.
 - 2. Remove all rocks, sticks, clods, debris, and other deleterious materials over one-half (1/2) inch in diameter from top 6 inches of soil.
 - 3. Float, rake, and roll all planting areas as necessary to establish smooth, clean, non-yielding planting beds.
 - 4. Prevent erosion of the soil between completion of soil preparation and planting.
- C. Concrete Mowbands and Wood Header Boards: Install in accordance with the Drawings and repeat specified initial preparations as necessary.

3.03 SOIL PREPARATION AND FINISH GRADES

- A. Soil Preparation:

1. Thoroughly roto-till the following additives into the top 6 inches of planting area soil at the following rates per 1,000 square feet:
 - a. Soil Amendment: 6 Cubic Yards.
 - b. Soil Conditioner: 200 Pounds.
 - c. Pre-Plant Fertilizer: 35 Pounds.
 - d. Soil Sulfur: 20 Pounds.
 2. The above additive recipe shall be used by Contractor for establishing the cost of soil additives in the Contract sum.
 - a. A site specific fertility test shall be performed by the Contractor after rough grading and applicable topsoil placement or replacement operations are complete. Soil shall be sent to Gro-Power, or other testing agency approved by Owner's Representative, for tests.
 - b. The results of the testing will be reviewed by the Owner Representative and direction for amendment additives ratio will be provided.
 - c. The Contract sum will be modified, in accordance with the procedures for changes in the work included in the Contract, if there is a variance from the above specified additives or quantities.
 3. After additives are fully incorporated into the soil, the Contractor shall perform further testing to check conformance with the newly recommended materials and quantities. If deficiencies are found, the Contractor shall be solely responsible for the cost of adding deficient material as necessary and re-testing required to verify conformance.
 4. Contractor shall also schedule 7 working days after soil samples have been taken to allow for receipt and evaluation of soil tests at no cost or delay to the project.
- B. Planting Area Finish Grades:
1. After tilling in additives and re-compaction to 85 percent relative compaction, rake planting areas smooth and set finish grades as follows.
 2. After soil preparation, finish grades of planting areas shall be 1 inch below adjacent paving, headers, utility boxes, irrigation boxes, and other in-grade items. Finish grade slopes shall be consistent.
 3. Drainage structures, including catch basins, area drains, and concrete swales, shall be flush with finish grade to allow for proper drainage. Soil shall be sloped consistently from spot elevations provided to drain.
 4. In planting areas to receive mulch, depth of mulch shall taper within 3 feet of paving edge to a depth from 3 inches to 1 inch at edge of pavement.
 5. Irrigation head elevation relative to finish grade shall be installed as shown.
 6. After sand channel drainage system, finish grade shall be re-established.
 7. Infield fines and warning tracks shall be graded to be flush with depth of sod soil. If sod is at 3/4 inches, then that will be the difference of the sod subgrade to the infield fines finish grade prior to placement of the sod.

3.04 SOD INSTALLATION

- A. General:
1. Soil preparation and fine grading shall be as specified.
 2. Prior to sod installation, roll turf bed until a smooth, firm surface with uniform grade has been produced.
 3. The turf bed shall be reviewed and accepted by the Owner's Representative prior to sod installation.
- B. Placement:
1. Sod shall be unrolled into place with careful attention to tight joints with no overlapping or stretching.

2. Stagger the joints in each new row like rows of bricks with a minimum 18 inch minimum stagger. Use a sharp knife for shaping around trees, flower beds or borders. Immediately after placement, soak sod areas with water.
 3. Roll sod after watering to smooth out bumps and air pockets, and roll again if sod is not even.
 4. Water frequently for the first 10 to 14 days with enough water to saturate soil to a depth of 4 inches.
 5. Do not allow sod dry out.
- C. Provide and install temporary fencing around completed sod areas if not protected by other fencing. Use 6 foot high temporary fence for protection.
- D. Refer to Section 31 0190 – Landscape and Site Maintenance for mowing and maintenance procedures. As applicable, the Contractor shall remove sod, re-grade any areas that have been rutted from mowers or otherwise damaged, and replace sod to the satisfaction of the Owner's Representative.
- E. Until project Final Acceptance, should it become evident that certain sod areas have not grown, re-sod the areas immediately with sod of the same type as originally used and maintain as specified.

3.05 TURF ESTABLISHMENT PERIOD

- A. Prior to commencement of specified maintenance period, turf shall be completely germinated, rooted and established, and a minimum of 2 mowings shall have taken place as follows:
1. First mowing shall take place when turf has reached a height of 3 inches and turf shall be mown to 2 inches. Submit written request to the Owner's Representative for acceptability of initiating first mowing.
 2. Thereafter, turf shall be mown weekly until turf is sod-like in appearance and quality, and all other contract requirements shall be fulfilled prior to allowing the maintenance period to commence.
 3. Contractor will receive a written notice of acceptance of turf establishment and to commence with landscape maintenance period.
 4. Owner's Representative will approve any phasing of turf areas to commence into the maintenance period. Areas may be approved in stages but will require contiguous areas of turf that are completely established.

3.06 TREE, SHRUB AND GROUND COVER PLANTING

- A. These areas shall receive specified topsoil and soil amendments prior to commencing with tree, shrub and ground cover planting.
- B. Layout: Coordinate layout of plants with Owner's Representative for review and acceptance.
- C. Plant Pit Excavation:
1. Excavate pits to sizes indicated in Drawings.
 2. Thoroughly scarify all sides of plant pits to remove "auger slick" and encourage root penetration.
- D. Set trees and shrubs in pit on tamped backfill base as per Details. Set plumb and face for best appearance. Thoroughly scarify all plant root balls to eliminate any circling roots and to encourage root growth. Set plant so root crown will level with or be slightly above surrounding grade after settlement.
- E. Backfilling:
1. Backfill mix for 1 gallon size and larger shall consist of 100 percent native site soil with plant tabs added per manufacturer's recommendations.
 2. Tamp backfill mix under and around root balls.
 3. Flood plant pit when half backfilled; allow to drain.

4. Complete backfilling. Tamp as necessary, do not over compact.

F. Watering:

1. Thoroughly water plants immediately after planting.
2. Construct water basins as specified in Drawings.

G. Finish Grade Restoration: Restore finish grades by hand raking. Dispose of excess subgrade soil.

3.07 HERBICIDE APPLICATION

A. Apply in accordance with manufacturers' recommendations.

B. Apply pre-emergent herbicide to soil prior to placement of bark mulch top-dress.

3.08 MULCH TOP DRESS

A. Rake mulch top dress evenly to create a uniform surface and pull bark mulch top dress away from trunks or stalks of plants 1 to 2 inches.

B. Mulch shall not dictate finish grade in planting areas. Mulch is to be added to finish grade.

3.09 INSTALLATION OF ADDITIONAL MATERIALS

A. Header Board: Install as shown on the Drawings.

B. Root Barriers: Install as shown on the Drawings.

3.10 FIELD QUALITY CONTROL

A. New turf areas shall be fenced off during turf establishment and specified Landscape Maintenance Period subject to the discretion of the Owner's Representative.

B. The Owner's Representative will review and accept the following prior to the Contractor proceeding with subsequent work:

1. Preparation: At completion of finish grading and prior to planting, grading tolerances and soil preparation will be checked for conformance to Contract Documents.
2. Layout of plants, header board, and other major items shall be as directed and accepted by the Owner's Representative.
3. Pre-Maintenance Review: At completion of planting, work shall be reviewed for conformance with Contract Documents. Acceptance shall mark beginning of the specified maintenance period. If acceptance is not given, a punch-list of items requiring attention will be issued to the Contractor. One more review will be allowed after Contractor certifies in writing that the punch-list has been completed. Punch-list shall be completed to the satisfaction of the Owner's Representative prior to commencement of the Specified Maintenance Period.

C. Costs incurred from repeat reviews required due to Contractor not being prepared and other non-conformance with Contract Documents will be back charged to the Contractor.

END OF SECTION

33 11 00

DOMESTIC WATER UTILITIES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Domestic water and fire system work is shown on the Drawings including, but is not necessarily limited to, the following:
 - 1. Intermediate staking and layout for domestic water system.
 - 2. Pipes, fittings, valves, valve boxes, connections, and fire hydrants for systems.
 - 3. Field testing and disinfection.

- B. Related Requirements:
 - 1. Section 32 11 00 - Base Courses
 - 2. Section 32 23 00 - Excavation and Fill
 - 3. Section 32 80 00 - Irrigation
 - 4. Section 32 90 00 - Planting

1.02 REFERENCES

- A. American Water Works Association: Current edition of Standards as specified.

- B. California Plumbing Code: Current Edition.

- C. State of California, Business and Transportation Agency, Department of Transportation (Caltrans) "Standard Specifications."

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action and Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.

- B. Sequence and Scheduling:
 - 1. Refer to other Contract Documents, determine the extent and character of related work, and properly coordinate work specified herein with that described elsewhere to produce a complete, operational installation.
 - 2. Contractor shall be solely responsible for coordinating, sequencing, and scheduling work with other trades and subcontractors to insure proper and timely performance of the work under this Section.

1.04 ACTION SUBMITTALS

- A. Product Data: Manufacturer's "cut-sheets" for products proposed for use.

1.05 INFORMATIONAL SUBMITTALS

- A. Certification that ductile iron pipe supplied for this Project has been manufactured in compliance with all requirements of AWWA C151.

- B. Certification that PVC pipe supplied for this project has been manufactured in compliance with all requirements of AWWA C900.

1.06 CLOSEOUT SUBMITTALS

- A. Project Record Drawings that provide accurately record locations of utilities remaining, re-routed utilities, new utilities, and newly discovered utilities by horizontal dimensions, elevations, inverts, and slope gradients. Comply with additional requirements specified in Section 01 78 39 – Project Record Documents.
- B. Warranty as specified.
- C. Results of field testing of completed system.
- D. Certificate of Compliance for disinfection.

1.07 QUALITY ASSURANCE

- A. Unless otherwise specified, install materials in accordance with manufacturer's recommendations.
- B. Contractor shall make necessary repairs to the domestic water system and other work affected by defects in the system through project Final Acceptance and specified warranty period. Repairs shall be made at the Contractor expense and at no additional cost to Owner.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Store pipe in a neat and orderly manner fully supported and protected from sunlight.
- B. Do not dump pipe off truck. Pipes are to be delivered, unloaded and handled so as to prevent damaging the material.

1.09 FIELD CONDITIONS

- A. PVC pipe shall not be cemented during wet conditions as determined by the Owner's Representative.
- B. Trench excavation and backfilling shall not be executed during excessively wet conditions as determined by the Owner's Representative.

1.10 WARRANTY

- A. Contractor: Provide Owner with a special written 1-year warranty covering entire water system against defects in installation, workmanship, and equipment from date of final acceptance.
 - 1. Contractor shall make necessary repairs to the system as well as to other work affected by defects in the system during warranty period.
 - 2. Repairs shall be made at the Contractor's sole expense.

1.11 MAINTENANCE

- A. Service: Contractor shall service and maintain domestic water system as necessary until project final acceptance.

PART 2 - PRODUCTS

2.01 PIPE AND FITTINGS

- A. General:

1. Pipe materials for domestic and fire water lines shall be in conformance with the California Plumbing Code and local governing agencies.
 2. Plans and details, if shown, are schematic in nature and do not necessarily identify all fittings and appurtenances required to provide a complete installation. The Contractor is responsible for providing complete and functional systems.
 3. Materials and procedures not specifically addressed herein shall comply with the appropriate AWWA standard.
 4. Materials proposed for use shall be in a new, "first class" condition unless otherwise noted.
- B. Water Lines 3 Inches and Greater Diameter:
1. Ductile Iron Pipe (DIP): Cement lined, of domestic manufacturer complying with ANSI/AWWA C151/A21.5, minimum Class 52; "Tyton Joint" by U.S. Pipe, Pacific States, or acceptable equal.
 - a. Cement mortar lining shall comply with ANSI/AWWA C104/A21.4.
 - b. Buried ductile iron pipe and fittings shall be wrapped in an 8-mil thick polyethylene film sleeve.
 2. Polyvinyl Chloride Pipe (PVC): Conform to AWWA C900, Class 200, of domestic manufacture, and meeting cast iron outside diameter sizes; C900 Series North American Specialty Products, JM Eagle, or acceptable equal.
 - a. Pipe shall be furnished with integral bells.
 - b. Spigot end pipe with separate double hub couplings is not acceptable.
- C. Water Lines 2 Inches and Smaller Diameter: One of the following.
1. Annealed (soft) Type "K" copper (Cu).
 2. Polyvinyl chloride (PVC) conforming to ASTM D1785, Schedule 80 PVC, of domestic manufacture, and meeting cast iron outside diameter sizes; ASTM D1785 Series North American Specialty Products, JM Eagle, or acceptable equal.
 - a. Pipe shall be furnished with integral bells.
 - b. Spigot end pipe with separate double hub couplings is not acceptable.
- D. Couplings and Sleeves:
1. General:
 - a. Couplings and sleeves shall be a minimum of 200-psi working pressure-rated unless except as otherwise noted.
 - b. Couplings and sleeves shall be mechanical joint type.
 - c. Couplings, sleeves, and accessories shall be of domestic manufacture; "Trim Tyton" by U.S. Pipe, Union Foundry, Tyler Pipe and Couplings, or acceptable equal.
 2. DIP and PVC Pipe 3 Inches thru 12 Inches:
 - a. Unless otherwise noted, couplings and sleeves for DIP and PVC shall be ductile iron conforming to AWWA C153, and shall be 350 psi working pressure rated.
 - b. Unless otherwise noted, flanges on all DIP spools shall conform to ANSI/AWWA C115/A21.15.
 3. PVC Pipe 2 1/2 Inches and Smaller: Schedule 40, solvent-weld PVC socket couplings.
 4. Copper Tubing: "Mueller 110" compression connections by Mueller Company Ltd., or acceptable equal.
- E. Gate Valves:
1. Use gate valves designed for a working pressure of not less than 150 psi.
 2. Provide connections as required for the piping in which they are installed.
 3. Provide an arrow on the operating nut or wheel, cast in metal, indicating direction of opening.
- F. Thrust Blocks: Class "A" concrete construction with dimensions conforming to the California Plumbing Code.
- G. Valve Boxes:
1. Size: 10 inches round boxes for gate valves.
 2. Box lid shall be labeled with "water" and shall be bolted down.

3. Boxes located in landscape areas shall be round plastic; Carson Model 910-10 with 910-4 lid, or equal.
 4. Boxes located in paving shall be concrete with concrete lid.
- H. Pipe Detection Tape: 3 inch wide, detectable type; "Terra Tape" "Sentry Line Detectable" from Reef Industries, Inc., 713.507.4251; or equal.
1. Text: "Caution Water Line Buried Below."
- I. Tracer Wire: Polyethylene insulated, copperclad steel; "SoloShot XTreme Tracer Wire" by Copperhead Industries, LLC. 877-726-5644, or equal.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Prior to starting work, test and verify that water pressure levels meet the domestic water system requirements. Notify the Owner's Representative immediately of any discrepancies and re-direct work to avoid delay.
- B. The utility plan and the piping details on the Drawings are diagrammatic. Pipe lines shown parallel in the Drawings may be placed in a common trench, provided that a minimum horizontal distance of 6 inches is maintained between buried lines, except for sanitary sewer lines, which require 10 feet horizontal clearance.

3.02 HANDLING

- A. Handle pipe accessories so as to ensure delivery to the trench in sound, undamaged condition.
- B. Use pinch bars or tongs for aligning or turning the pipe only on the bare end of the pipe.
- C. Thoroughly clean interior of pipe and accessories before lowering pipe into trench. Keep clean during laying operations by plugging or other acceptable method.
- D. Before installation, inspect each piece of pipe and each fitting for defects.
- E. Replace material found to be defective, both before or after laying, with sound material meeting the specified requirements and without additional cost to the Owner.
- F. Rubber gaskets: Store in a cool dark place until just prior to time of installation.

3.03 PIPE CUTTING

- A. Cut pipe neatly and without damage to the pipe.
- B. Unless otherwise recommended by the pipe manufacturer, cut pipe with mechanical cutter only.
- C. Use wheel cutters when practicable.
- D. Cut pipe square, and remove all burrs prior to use.

3.04 TRENCHING

- A. Conform to requirements specified in Section 31 23 00 – Excavation and Fill and the following.

- B. Excavate trenches with vertical sides uniform bottom, free of deleterious materials, and wide enough for pipes to lay side by side, fully supported on bottom.
 - 1. No lines shall be installed parallel to and directly over another line.
 - 2. When lines must cross, the angle shall be 45 to 90 degrees, and a minimum of 6 inch vertical clearance shall be maintained.
- C. Provide minimum coverage for pressurized service as follows:
 - 1. Landscape Areas: 24 inches.
 - 2. Paved Areas: 30 inches.

3.05 PLACING AND LAYING

- A. General:
 - 1. Lower pipe and accessories into trench by means recommended by the manufacturer.
 - 2. Except where necessary in making connections to other lines, lay pipe with the wide bell end opening facing source.
 - 3. Rest the full length of each section of pipe solidly on the pipe bed, with recesses excavated to accommodate wells, couplings, and joints.
 - 4. Replace pipe that has been disturbed after laying.
 - 5. Do not lay pipe in water, or when trench conditions are unsuitable for the work. De-water trench until jointing is completed.
 - 6. Securely close open ends of pipe and valves when work is not in progress.
 - 7. Where any part of coating or lining is damaged, repair at no additional cost to the Owner.
 - 8. Follow manufacturer's detailed instructions in installing and assembling pipe.
- B. Plastic Pipe:
 - 1. Position pipe and fittings in trench in a manner that identifying markings will be readily visible for inspection.
 - 2. Cutting and joining:
 - a. Protect against abrasion from serrated holding devices.
 - b. Remove burrs and glosses from surfaces to be jointed; use abrasive paper, file, or steel wool.
 - c. Remove dirt, dust, and moisture by wiping clean with dry cloth.
 - 3. Align pipe system components without strain.
 - 4. Support plastic pipe in trenches with a 2 inch minimum layer of bedding Provide a minimum 3 inch bedding sand cover. Allow no rocks, debris, or potentially damaging substances within 6 inches of plastic pipe in trenches.
- C. Connections: Use appropriate fittings to suit the actual condition where connections are made between new work and service points.

3.06 JOINTING

- A. Mechanical Joints and Push-On Type Joints: Install in accordance with AWWA C600, modified as necessary by the recommendation of the manufacturer, to provide for special requirements of specified pipe.
- B. Make connections between different types of pipe and accessories with transition fittings.
- C. Rubber Gaskets:
 - 1. Handle and install in strict accordance with the recommendations of the manufacturer.
 - 2. Lubricants for gaskets shall be manufactured by or approved by the pipe manufacturer for use under the conditions found in the field.

3.07 SETTING VALVES AND VALVE BOXES

- A. Center valve boxes on the valves, setting plumb.
- B. Tamp earth fill around each valve box to a distance of four feet on all sides, or to be undisturbed trench face if less than four feet.
- C. Tighten mechanical joints, and fully open and close each valve to assure that all parts are in working condition.

3.08 THRUST BLOCKS

- A. Provide and install thrust blocks in accordance with California Plumbing Code requirements and installation guidelines.

3.09 TESTING, INSPECTING, AND DISINFECTION

- A. General:
 - 1. Do not allow or cause the work of this Section to be covered up or enclosed until after it has been completely inspected, tested, and has been accepted by the Owner's Representative and governing authorities when applicable.
 - 2. Perform tests and disinfection in a manner acceptable to governmental agencies having jurisdiction.
- B. Testing:
 - 1. Except for joint material setting, or where concrete reaction backing necessitates a five day delay, pipelines joints, or couplings may be subjected to hydrostatic pressure, inspected, and tested for leakage at any time after partial completion of backfill.
 - 2. Testing of water service shall be in accordance with the requirements of AWWA C600 for hydrostatic testing.
 - 3. Contractor shall keep records of each piping test, including date and time of test, name of witnessing Owner Representative, test pressure, description of piping tested, and clarifying comments including those related to leaks and repairs made.
 - 4. Tests shall last 4 hours and be tested at 200 psi.
- C. Disinfection:
 - 1. Before acceptance of the domestic water system, disinfect each unit of completed service line in accordance with AWWA C601 and criteria of the local governing jurisdiction.
 - 2. Proposed method for disinfection shall be submitted to the Owner's Representative for review and acceptance.
 - 3. Furnish two copies of a Certificate of Compliance to the Owner.

3.10 BACKFILLING

- A. Backfill only after specified tests have been performed and accepted.
- B. Clean trenches of debris and deleterious material before backfilling.
- C. Backfill, as specified or shown in Drawings, shall be free from deleterious material.
- D. Compact trenching to 95 percent relative compaction under pavement and 85 percent relative compaction within planting areas.
- E. Trench surfaces shall be flush with finish grade. Trench settlements shall be corrected by the Contractor at no additional cost to the Owner.

- F. Install pipe detection tape and reinforced tracer wire above pressurized lines.

3.11 DEMONSTRATION

- A. Contractor shall instruct Owner's personnel in complete and proper operation of domestic water system per prior to Contract closeout.

3.12 FINAL REVIEW

- A. Provide Owner's Representative with specified closeout submittals prior to Final Review.

END OF SECTION

SECTION 33 30 00

SANITARY SEWERAGE UTILITIES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Site sanitary sewerage and related work as shown on the Drawings and specified including, but is necessarily limited to, the following:
 - 1. Sanitary sewerage system installation for drinking fountains.
- B. Related Requirements:
 - 1. Section 31 20 00 - Earth Moving
 - 2. Section 31 23 00 - Excavation and Fill
 - 3. Section 32 11 00 - Base Courses
 - 4. Section 32 32 15 - Landscape Concrete
 - 5. Section 32 33 00 - Site Furnishings
 - 6. Section 33 11 00 - Domestic Water Utilities

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. C700 Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated.
 - 2. D3034: Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
- B. American Water Works Association (AWWA):
 - 1. C110: Ductile-Iron and Gray-Iron Fittings, 3 In. Through 48 In. (76 mm Through 1,219 mm) for Water.
 - 2. C111: Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
 - 3. C151: Ductile-Iron Pipe, Centrifugally Cast, for Water.
- C. California Plumbing Code, current edition, Sections as specified.
- D. State of California, Business and Transportation Agency, Department of Transportation (Caltrans) "Standard Specifications."
- E. "The Greenbook: Standard Specifications for Public Works Construction," current edition.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action and Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.
- B. Sequencing and Scheduling:
 - 1. Refer to all other Contract Documents, determine the extent and character of related work, and properly coordinate work specified herein with work included under other Sections to produce a complete, operational installation.
 - 2. Contractor shall be solely responsible for coordinating, sequencing, and scheduling work with applicable trades and subcontractors to insure proper and timely performance.

1.04 ACTION SUBMITTALS

- A. Product Data: Manufacturers' data sheets for the following:
 - 1. Piping materials and fittings.
 - 2. Special pipe couplings.
 - 3. Precast concrete cleanout boxes and box covers.

1.05 INFORMATIONAL SUBMITTALS

- A. Design Mix Reports and Calculations: Submit for each class of cast in place concrete.
- B. Field Test Reports: Indicate and interpret test results for compliance with specified performance.

1.06 QUALITY ASSURANCE

- A. Control of Work: Conform to Section 5 of the Standard Specifications.
- B. Control of Materials: Conform to Section 6 of the Standard Specifications.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Store pipe neat and orderly stacked and blocked to prevent damage. Cracked, checked, spalled or otherwise damaged pipe shall be removed from site.
- B. Use of chain slings shall not be permitted.
- C. Pipe, fittings, precast sections, cast iron fittings, covers and all other materials shall be carefully handled at all times.
- D. All pipelines and fittings shall be kept clean and closed during construction.

1.08 FIELD CONDITIONS

- A. Make provisions to take the necessary precautions to protect existing work from damage during execution of this work.
- B. Work of this Section shall not be executed when site conditions are detrimental to quality of work as determined by the Owner's Representative.
- C. PVC pipe shall not be solvent welded during wet conditions.

PART 2 - PRODUCTS

2.01 PIPE AND FITTINGS

- A. General: Pipe and fittings shall be clearly and permanently marked to identify manufacturer, type, class, or schedule and NSF approval as applicable.
- B. Polyvinyl Chloride Pipe (PVC) and Fittings: SDR 26 bell and spigot, Type I PVC 1120, and complying with ASTM D3034.
- C. Ductile Iron Pipe (DIP) Joints and Fittings: Class 50, rubber gasket push-on type, in compliance with AWWA C151, C111, and C110.

- D. Vitrified Clay Pipe (VCP) and Fittings: Extra strength, unglazed for socket and spigot joint, complying with ASTM C700.

2.02 STRUCTURES

- A. Clean Outs: As detailed on Drawings and as follows.
 - 1. Non-Vehicular Travel Areas: Christy "F8" by Oldcastle Precast clean out boxes, or equal.
 - 2. Vehicular Travel Areas: Christy "G5" Oldcastle Precast clean out boxes, or equal.

2.03 MISCELLANEOUS MATERIALS

- A. Crushed Rock: 3/4-inch bedding rock as specified in Section 32 11 00 – Base Courses
- B. Mortar: Conform to applicable sections of the Standard Specifications. Mixture shall be a 1:2 Portland cement to sand mixture with a minimum of water.
- C. PVC Solvent Cement: Conform to pipe manufacturer's recommendations.
- D. PVC Primer: Conform to pipe and solvent cement manufacturer's recommendations.
- E. Reinforcing Bars: Refer to Section 32 32 15 – Landscape Concrete.
- F. Minor concrete shall comply with Section 32 32 15 – Landscape Concrete and applicable sections of the Standard Specifications.

PART 3 - EXECUTION

3.01 PIPE LAYING

- A. General:
 - 1. The Owner's Representative will review and accept pipe prior to installation.
 - 2. Pipe shall be installed in conformance with Section 31 23 00 – Excavation and Fill.
 - 3. Sanitary sewer installations shall be reviewed and accepted by the Owner's Representative prior to backfilling.
- B. Pipe:
 - 1. Pipe shall be laid in trench to specified lines and grades fully and evenly supported layer of bedding material as specified and identified on the Drawings. Excavate bedding so bell fittings are clear from soil 6 inches on each side of joint and to a depth sufficient to avoid contamination of joint. Refer to Drawings for additional information.
 - 2. Pipe shall be laid beginning at the outlet and proceeding with each bell end opening facing upgrade.
 - 3. Cut pipe square and ream to remove burrs prior to use.
 - 4. Connections:
 - a. Thoroughly clean and dry all components to be joined.
 - b. Apply primer and sufficient cement to coat joint surfaces of both components and fill gaps but not in excess.
 - c. Join pipe, wipe off excess cement, and fully support pipe until joint has cured.
- C. Provide sleeving where shown, and where pipes penetrate walls, using schedule 40 PVC pipe minimum 1/4-inch diameter larger than pipe or other method acceptable to the Owner's Representative.

3.02 STRUCTURES AT GRADE

- A. General:
 - 1. Set rim or cover elevations to specified grades.
 - 2. Adjust as required to set flush with proposed grades and pavement sections.
- B. Clean Outs:
 - 1. Excavate as required.
 - 2. Set on firm unyielding base. Set on compacted select backfill material unless otherwise indicated.

3.03 SANITARY SEWER CONNECTIONS

- A. Sanitary sewer connections to existing sewer mains shall be made watertight, straight, and true to line, grade and "crown to crown" unless noted otherwise.

3.04 FIELD QUALITY CONTROL

- A. The Owner's Representative shall review and accept work at the following stages:
 - 1. Excavated trench with bedding in place prior to any pipe being laid.
 - 2. Pipe laid prior to backfilling. Any pipe covered prior to acceptance shall be uncovered for review and re-backfilled at contractor's expense.
- B. The Contractor shall furnish the necessary labor, equipment and materials necessary to perform air tests of the completed sewerage project before the system is placed in operation or connected to other lines.
- C. In no case shall the Contractor place the newly constructed sewer in operation without acceptance by the Owner's Representative.

3.05 PIPELINE TESTING AND FLUSHING

- A. New sections of sanitary sewer main shall be air tested using the following procedures:
 - 1. Test is conducted between 2 consecutive manholes, or as directed by the Owner's Representative.
 - 2. The test section of the sewer line is plugged at each end. One of the plugs used at the manhole must be tapped and equipped for the air inlet connection for filling the line from the air compressor.
 - 3. Service laterals, stubs and fittings into the sewer test section should be properly capped or plugged and carefully braced against the internal pressure to prevent air leakage by slippage and blowouts.
 - 4. Connect air hose to tapped plug selected for the air inlet. Then connect the other end of the air hose to the portable air control equipment which consists of valves and pressure gauges used to control the air entry rate to the sewer test section, and to monitor the air pressure in the pipe line. More specifically, the air control equipment includes a shut-off valve, pressure regulating valve, pressure reduction valve and a monitoring pressure gage having a pressure range from 0-5 psi. The gage shall have minimum divisions of 0.10 psi and an accuracy of 0.40 psi.
 - 5. Connect another air hose between the air compressor, or other source of compressed air, and the air control equipment. This completes the test equipment set-up. Test operations may commence.
 - 6. Supply air to the test section slowly, filling the pipeline until a constant pressure of 3.5 psi is maintained. The air pressure must be regulated to prevent the pressure inside the pipe from exceeding 5.0 psi.
 - 7. When constant pressure of 3.5 psi is reached, throttle the air supply to maintain the internal pressure above 3.0 psi for at least 5 minutes. This time permits the temperature of the entering air to equalize with the temperature of the pipe wall. During this stabilization period it is advisable to check all capped and plugged fittings with a soap solution to detect any leakage at these connections. If leakage is detected at any cap or plug, release the pressure in the line and tighten all leaky caps and plugs. Then start the test operation again by supplying air. When it is

necessary to bleed off the air to tighten or repair a faulty plug, a new 5-minute interval shall be allowed after the pipeline has been refilled.

8. After the stabilization period, adjust the air pressure to 3.5 psi and shut-off or disconnect the air supply. Observe the gage until the air pressure reaches 3.0 psi. At 3.0 psi commence timing with a stopwatch which is allowed to run until the line pressure drops to 2.5 psi at which time the stopwatch is stopped. The time required, as shown on the stopwatch, for a pressure loss of 0.5 psi is used to compute the air loss.
9. If the time, in minutes and seconds, for the air pressure drop from 3.0 to 2.5 psi is greater than that shown in the following table for the designated pipe size, the section undergoing test shall have passed and shall be presumed to be free of defects. The test may be discontinued at that time.
10. If the time, in minutes and seconds, for the 0.5 psi drop is less than that shown in the following table for the designated pipe size, the section of the pipe shall not have passed the test; therefore, adequate repairs must be made and the line retested.

Requirements for Air Testing:		
Pipe size in Inches	Time	
	Minutes	Seconds
4	2	32
6	3	50
8	5	06
10	6	22
12	7	39
14	8	56
15	9	35
16	10	12
18	11	34
20	12	45
21	13	30
For larger diameter pipe use the following: Minimum time in seconds = 462 x pipe diameter in feet		

11. For 8 inch and smaller pipe, only: If, during the five-minute saturation period pressure drops less than 0.5 psi after the initial pressurization and air is not added, the pipe section undergoing test shall have passed.
12. Multi-Pipe Sizes: When the sewer line undergoing test is 8 inches or large diameter pipe and includes 4 inch or 6 inch laterals, the figures in the Table for uniform sewer main sizes will not give reliable or accurate criteria for the test. Where multi-pipe sizes are to undergo the air test, compute the average size in inches which is then multiplied by 38.2 seconds. The results will give the minimum time in seconds acceptable for a pressure drop of 0.5 psi for the averaged diameter pipe.
13. Adjustment Required for Groundwater:
 - a. An air pressure correction is required when the ground water table is above the sewer line being tested. Under this condition, the air test pressure must be increased 0.433 psi for each foot the ground water level is above the invert of the pipe.
 - b. Where ground water is encountered or is anticipated to be above the sewer pipe before the air testing will be conducted, the following procedure shall be implemented at the time the sewer main and manholes are constructed.
 - 1) Install a pipe nipple, threaded one or both ends and approximately 10 inches long, through the manhole wall directly on top of one of the sewer pipes entering the manhole with threaded end of nipple extending inside the manhole.
 - 2) Seal pipe nipple with a threaded cap.
 - 3) Immediately before air testing, determine the ground water level by removing the threaded cap from the nipple, blowing air through the pipe nipple to remove any obstructions, and then connecting a clear plastic tube to the pipe nipple.
 - 4) Hold plastic tube vertically permitting water to rise in it to the groundwater level.

- 5) After water level has stabilized in plastic tube, measure vertical height of water, in feet, above invert of sewer pipe.
- 6) Determine air pressure correction, which must be added to the 3.0 psi normal starting pressure of test, by dividing the vertical height in feet by 2.31. The result gives the air pressure correction in pounds per square inch to be added.

Example: If the vertical height of water from the sewer invert to the top of the water column measures 11.55 feet, the additional air pressure required would be:

$$(11.55) / (2.31) = 5.0 \text{ psi}$$

Therefore, the starting pressure of the test would be 3.0 plus 5 or 8.0 psi, and the 0.5-pound drop becomes 7.5 psi. There is no change in the allowable drop (0.5 psi) or in the time requirements established for the basic air test.

- B. After the line has passed the air test, it shall be balled and flushed with water to clean. A metal screen shall be used downstream at the point of connection to the existing system to collect and remove rock and other debris that is flushed out during cleaning.

END OF SECTION

SECTION 33 40 00

STORM DRAINAGE UTILITIES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Storm drainage system improvements and related work as shown on the Drawings and specified including, but is necessarily limited to, the following:
 - 1. Pipe and fittings.
 - 2. Nonpressure transition couplings.
 - 3. Expansion joints and deflection fittings.
 - 4. Cleanouts.
 - 5. Drains.
 - 6. Catch basins.
 - 7. Stormwater inlets.
 - 8. Stormwater treatment systems.
 - 9. Pipe outlets.

- B. Related Requirements:
 - 1. Section 31 20 00 - Earth Moving
 - 2. Section 31 23 00 - Excavation and Fill
 - 3. Section 32 11 00 - Base Courses
 - 4. Section 32 32 15 - Landscape Concrete
 - 5. Section 32 33 00 - Site Furnishings
 - 6. Section 33 10 10 - Domestic Water Utilities

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. C923: Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals.
 - 2. D2321: Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
 - 3. D2412: Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading.
 - 4. D2729: Standard Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
 - 5. D3034: Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
 - 6. D3350: Standard Specification for Polyethylene Plastics Pipe and Fittings Materials.
 - 7. D4101: Standard Specification for Polypropylene Injection and Extrusion Materials.

- B. California Building Code, Current Edition.

- C. State of California, Business and Transportation Agency, Department of Transportation (Caltrans) "Standard Specifications."

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Submittal Procedures: Action and Informational Submittals shall be submitted in accordance with Section 01 33 00 - Submittal Procedures.

- B. Coordinate work of this section with all other work contained in the Contract Documents.

1.04 ACTION SUBMITTALS

- A. Shop Drawings:
 - 1. Catch basins, drain inlets: Include plans, elevations, sections, details, frames, covers, and grates.
- B. Product Data: Manufacturer's cut-sheets of products to be used.

1.05 INFORMATIONAL SUBMITTALS

- A. Profile Drawings: Show system piping in elevation. Draw profiles at horizontal scale of not less than 1-inch equals 50 feet (1:500) and vertical scale of not less than 1-inch equals 5 feet (1:50). Indicate manholes and piping. Show types, sizes, materials, and elevations of other utilities crossing system piping.
- B. Field Test Reports indicating and interpreting test results for compliance with performance.

1.06 CLOSEOUT SUBMITTALS

- A. Record Drawings:
 - 1. Accurately record location of new piping, drain structures, and connections to existing systems using horizontal dimensions, elevations, inverts, and slope gradients as applicable.
 - 2. Comply with the additional requirements of Section 01 78 39 – Project Record Documents.

1.07 QUALITY ASSURANCE

- A. Control of Work: Conform to Section 5 of the Standard Specifications.
- B. Control of Materials: Conform to Section 6 of the Standard Specifications.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Store pipe neatly and orderly, stacked and blocked to prevent damage. Cracked, checked, spalled, or otherwise damaged pipe and precast concrete units shall be removed from site.
- B. Use of chain slings shall not be permitted.
- C. Piping, fittings, and related materials shall be carefully handled. Comply with manufacturer's rigging instructions for precast items. Use of chain slings is not be permitted.
- D. All pipelines, fittings and drainage structures shall be kept clean and closed during construction.

1.09 FIELD CONDITIONS

- A. Make provisions for, and take the necessary precautions to, protect existing and new work from damage during entire life of project.
- B. Work of this Section shall not be executed when site conditions are detrimental to quality of work as determined by the Owner's Representative.
- C. Do not interrupt service to facilities occupied or used by Owner without the Owner's written permission.

PART 2 - PRODUCTS

2.01 PIPE AND FITTINGS

A. General:

1. Pipe and fittings shall be clearly and permanently marked to identify manufacturer, type, class, or schedule and NSF approval as applicable.
2. Unless otherwise noted, Contractor has option of using either CHDPE or PVC pipe as specified.

B. Corrugated High Density Polyethylene (CHDPE) Pipe: Dual wall, perforated and solid with an integrally formed smooth waterway; "N-12 "drainage pipe by Advanced Drainage Systems, Inc., 510-913-2211, or equal.

1. Nominal sizes shall have a full circular cross-section, with an outer corrugated pipe wall and an essentially smooth inner wall (waterway).
2. Corrugations may be either annular or spiral.
3. Sizes shall conform to the AASHTO classification "Type S."
4. Pipe manufacturer for this specification shall comply with the requirements for test methods, dimensions, and markings found in AASHTO Designations M252 and M294.
5. The minimum parallel plate stiffness values when tested in accordance with ASTM D2412 shall be as follows:

Diameter	Pipe Stiffness
4 inch (100 mm)	50 psi (340 kPa)
6 inch (150 mm)	50 psi (340 kPa)
8 inch (200 mm)	50 psi (340 kPa)
10 inch (250 mm)	50 psi (340 kPa)
12 inch (300 mm)	50 psi (340 kPa)
15 inch (375 mm)	42 psi (290 kPa)

6. Fittings: Virgin PE compounds conforming with the requirements of ASTM D3350, cell class 324420C, and supplied or recommended by the pipe manufacturer.
 - a. The fittings shall not reduce or impair the overall integrity or function of the pipeline.
 - b. Common Corrugated Fittings:
 - 1) Couplers, reducers, and other in-line joint fittings.
 - 2) "Tees", "wyes", end caps, and other branch or complimentary assembly fittings.
 - c. Acceptable Installation Methods: Snap-on, screw-on, bell and spigot, and wrap around.
 - d. Couplings shall provide sufficient longitudinal strength to preserve pipe alignment and prevent separation at the joints.
 - e. Where designated on the Drawings and as required by the manufacturer, a neoprene or rubber gasket shall be supplied.

C. Smooth Polyvinyl Chloride Pipe (PVC) and Fittings: SDR 26, spigot end, Type I PVC 1120, NSF approved, and complying with ASTM D3034.

D. Smooth Polyvinyl Chloride (PVC) Perforated Drain Pipe and Fittings: Bell and non-pressure rated PVC SDR 35 pipe with two rows of perforations 120 degrees apart on bottom of pipe 5 inches on center, conforming with ASTM D2729 or ASTM D3034 and Section 68 of the Standard Specifications.

2.02 DRAINAGE STRUCTURES

A. Precast Catch Basins:

1. General:
 - a. Grates in paved areas shall conform to ADA Standards for Accessible Design.

- b. All catch basins to have locking mechanism or screw down grate to frame.
 - c. Provide two grade rings at each catch basin.
 - 2. 12-Inch Basin: "CB12" supplied by Central Precast – US Concrete, or equal.
 - a. Grating: Round, galvanized steel, ADA compliant, lockable, and meeting AASHTO H20 heavy-duty loading, or equal.
 - 3. 18-Inch Basins: "RBT 1812" as supplied by Oldcastle Precast, 888-965-3220, or equal.
 - a. Grating: Round, lockable.
 - 4. 24-inch Basins: "RBT 2412" as supplied by Oldcastle Precast, 888-965-3220, or equal.
 - a. Grating: Round, ADA compliant, and lockable.
 - 5. 36-Inch Basins: Christy "CB-3" drain box Oldcastle Precast, 888-965-3220, or equal.
 - a. Grating: Galvanized steel, ADA compliant, lockable, and meeting AASHTO H20 heavy-duty loading.
- B. Overflow Risers:
 - 1. General:
 - a. Grates shall conform to plans/details.
 - b. Overflow risers to have locking mechanism or screw down grate to frame.
 - 2. Structure:
 - a. Precast frame: 24-inch Overflow Risers: "RBT 2412" as supplied by Oldcastle Precast, 888-965-3220, or equal.
 - b. Reinforced Concrete Pipe: 24-inch Standard reinforced class III concrete pipe, cut to size per plans
 - c. Grating: Manhole Ring and lockable Beehive Grate MH25BH by Olympic Foundry or approved equal.
- C. PVC Catch Basins: Nyloplast, 866-888-8479, or equal.
 - 1. Basin Bodies: PVC.
 - 2. Connection to corrugated pipes shall be made with flexible rubber gasket meeting requirements of ASTM F477.
 - 3. Casting shall be ductile iron.
 - 4. Flashboards shall be constructed of a corrosion-resistant material.
 - 5. Inlet and Outlet Size: As indicated on the Drawings.
- D. Extensions: Provide box extensions, junction boxes and grade rings compatible with structures as necessary to finish at the proper elevation and to facilitate future elevation adjustments as noted below.
- E. Clean Outs: As shown or noted in the Drawings.
- F. French Drain: As shown or noted in the Drawings.
- G. Atrium Drains: 3-inch round, flat-top structural foam polyolefin with UV inhibitor; Part No. 70 by NDS, Inc., 888-825-4716, or equal.
- H. Drop Inlet: 12 inches, Model #1240 by NDS, Inc., 888-825-4716, or equal.
- I. Trench Drains: Pre-sloped slot channel drain; Model KS 100S by ACO Polymer Products, Inc., 888-490-9552, or equal.
 - 1. Provide appropriate end connections and 600 series catch basin with in-line trash bucket and outlet connections.
 - 2. Grates:
 - a. Pedestrian Locations: No. 494Q with quick lock locking device and complying ADA Standards for Accessible Design.
 - b. Vehicular Traffic Locations: Galvanized, No. 411Q.
- J. Drinking Fountain Drain: Square with cast iron body and bronze grate; Z415 Series floor drain Model Z415SH by Zurn, or equal.

1. Size: 8 inches by 8 inches.

2.03 ADDITIONAL MATERIALS

A. Drain Rock:

1. Shall be 3/4-inch x 1/2-inch crushed virgin, un-recycled, washed rock, meeting the following general gradation requirements:

Sieve Size	Percent Passing
1"	100
3/4"	90-100
1/2"	10-40
3/8"	0-15
#4	0-5

2. Soft rock materials, including sandstone, limestone, and shale, are not suitable. Rock supplier shall certify that all supplied rock will be void of this type of rock.
3. Supplier: Stevens Creek Quarry, Inc., Cupertino, or TMT Enterprises, Inc., San Jose, or equal.

B. Pea Gravel:

1. Pea gravel shall conform to the following gradation requirements:

U.S. Standard Sieve Mesh	Allowable Range Percent Retained on Sieve
1/2 inch (12.5 mm)	95% passing
1/4 inch (6.3 mm)	45% passing
10 mesh (2.0 mm)	No more than 10% passing
18 mesh (1.0 mm)	No more than 5% passing

2. Supplier: Harbor Sand & Gravel, Redwood City, TMT Enterprises, Inc., San Jose; or equal.

C. Sand Bedding for Storm Drain Piping: Sand conforming to Section 19-3.02F(2) of the Standard Specifications.

D. French drains shall have a backfill with one of the following general characteristics:

1. USGA Root Zone Sand,
 - a. 65 percent USGA Root Zone sand conforming to the following sieve range:

Sieve Size	USGA Spec
	Individual % Retained
#4 (4.75mm)	0
#10 (2mm)	0-10% Combined
#18 (1mm)	
#35 (0.5mm)	
#60 (.25mm)	Minimum 60% Combined
#100 (.15mm)	20% Maximum
#140 (.1mm)	5% Maximum Combined

Sieve Size	USGA Spec
	Individual % Retained
#270 (.05mm)	
Silt (.05-.002mm)	5% Maximum
Clay (<.002mm)	3% Maximum

- b. 15 percent Coconut Coir Fiber.
 - c. 15 percent AXIS Calcined Diatomaceous Earth.
 - d. 5 percent Worm Castings.
2. Supplier: 'Terra Vida French Drain Backfill Mix' by TMT Enterprises. Contact: Matt Moore 408-432-9040
- E. Bioretention soil mixture in rain gardens shall have the following general characteristics:
- 1. Properties of bioretention soil mix:
 - a. Consisting of the following mixture, measured by volume:
 - 1) 60-70% Compost
 - 2) 30-40% Sand
 - b. Supportive of vigorous plant growth
 - c. Able to achieve a long-term, in-place infiltration rate of at least 5 in/hr. and no more than 10 in/hr.
 - 2. Supplier: Biotreatment soil mix' by TMT Enterprises. Contact: Matt Moore (408) 432-9040
- F. Filter Fabric for French Drain: Mirafi 140N, or equal.
- G. Filter Fabric Fasteners: Metal clip type staple.
- H. Mortar: A 1:2 Portland cement to sand mixture with a minimum of water conform to the applicable sections of the Standard Specifications.
- I. Structural Adhesives for Catch Basins and Junction Boxes: "Ram-Nek" by Henry Company, 800-523-0268, or equal as available.
- J. Reinforcing Bars: As specified in Section 32 32 15 – Landscape Concrete.
- K. Minor Concrete: Comply with requirements of Section 32 32 15 – Landscape Concrete.

PART 3 - EXECUTION

3.01 EARTHWORK

- A. Excavation, trenching, and backfilling are specified in Section 31 20 00 - Earth Moving.

3.02 PIPING INSTALLATION

- A. General:
 - 1. Pipe shall be installed per manufacturers' instructions and in conformance with the Contracts Documents.
 - 2. Installation of thermoplastic pipe shall be in accordance with ASTM D2321.
- B. CHDPE Pipe:
 - 1. Pipe shall be installed with a minimum cover under the H-20 live load equal to 12 inches to the top of subgrade elevation.

2. Minimum compaction for pipe subject to H-20 live load is 90 percent in accordance with Section 19, Standard Specifications.
3. CHDPE pipe shall be laid and jointed in accordance with generally accepted practice and the following provisions to provide the required work.

3.03 INSTALLATION OF DRAINAGE STRUCTURES

- A. General: Set rim or cover elevations to specified grades utilizing a minimum of two grade rings (or extensions) at top of drainage structure to facilitate potential elevation adjustments in the future.
- B. Catch Basins: Install as shown in the Drawings and as follows:
 1. Excavate as required.
 2. Set on firm, unyielding base. Set on compacted select backfill material if directed by Owner's Representative.
 3. Prefabricated units not having a bottom shall be set on a poured-in-place concrete slab with smooth trowel finish. Mortar and properly seal unit to slab, making a watertight connection.
 4. Install pipe inlets and outlets to specified elevations. Grout and/or seal all joints to a watertight condition with material per manufacturer's recommendation.
- C. French Drains and Cleanouts: Install as shown in the Drawings.
- D. Trench Drains: Install as shown in the Drawings and in accordance with the manufacturer's written recommendations.
- E. Drywells, Drinking Fountain Drains, Atrium Drains and Drop Inlets: Install as shown in the Drawings and in accordance with the manufacturer's written recommendations.
- F. French Drainage System:
 1. Preparation:
 - a. Provide protection to all prepared grades and/or turf areas.
 - b. Amend turf areas per specifications.
 - c. Ensure perimeter drains are installed and drain properly.
 - d. Verify all grades prior to commencement.
 - e. Verify irrigation system functions properly.
 - f. Remove all irrigation heads, cap swing joints.
 - g. Compact topsoil to 85% relative compaction.
 2. Drain Trench Installation:
 - a. Utilize trenching equipment capable of trenching at 3" maximum width, removing spoils and installing pipe in one operation to ensure no spoils are remaining on the surface that may contaminate trenches.
 - b. Piping shall be sloped to conform to finish grades and ensure positive drainage.
 - c. Fill trenches with specified sand while compacting at the same time to ensure no settling or sidewall cave-in.
 - d. Terminate 2-inch pipe in perimeter drain trench, fill to surface with specified sand.
 3. Sand Trench Installation:
 - a. Install top-drains at specified spacing and at angle relative to drain trenches as indicated on plans.
 - b. Utilize trenching equipment capable of trenching multiple trenches at specified spacing simultaneously while also removing the trench spoils, injecting the sand, and compacting all in the same pass to ensure a clean process and minimizing side wall cave-in and compaction. Perform this process ensuring that trenches are slightly overfilled.
 - c. Top dress 1/4" of same sand over the entire surface to provide a sand cap upon completion. Utilizing a drag mat, drag the excess sand over the surface to ensure a smooth surface.
 - d. Laser grade sand to final grade, all the while ensuring not to make contact with underlying soils that may contaminate the surface.
 - e. Replace all irrigation heads, flush and test.

3.04 IDENTIFICATION

- A. Materials and their installation are specified in Section 31 20 00 - Earth Moving. Arrange for installation of green warning tape directly over piping and at outside edge of underground structures.
- B. Use detectable warning tape over nonferrous piping and over edges of underground structures.

3.05 FIELD QUALITY CONTROL

- A. The Owner's Representative shall review and accept work at the following stages:
 - 1. Excavated trench with bedding in place prior to any pipe being laid.
 - 2. Pipe laid prior to backfilling. Pipe covered prior to review and acceptance shall be uncovered and re-backfilled at Contractor's expense.
 - 3. Drainage device location and pipe connection.
 - 4. New drainage system shall be flood tested and clean of debris.

END OF SECTION