

PROJECT MANUAL

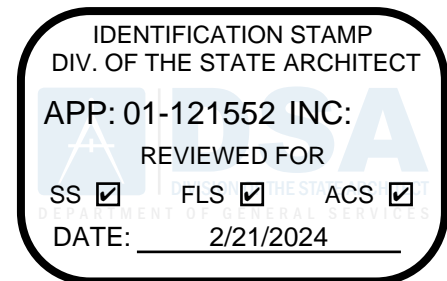
Short Elementary School ECE Development Center

35 Marin St, San Rafael, CA 94901

San Rafael City Elementary School District

310 Nova Albino way

San Rafael, CA 94903



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Phone: (530) 781-3112

Project No: 2023-014.00

02/09/24

PROJECT MANUAL

PROJECT/CONTRACT NUMBER: 24-08

**Short Elementary School
ECE Development**

SAN RAFAEL CITY SCHOOLS

February 28, 2024

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NOTICE TO BIDDERS

1. Notice is hereby given that the governing board ("Board") of the San Rafael City Schools ("District") will receive electronic bids for the following project, Bid No. 24-08 ("Project" or "Contract"):

Short Elementary School Early Childhood Education ("ECE") Development

2. The Project consists of:

Four Restroom renovations; Plumbing; Electrical; AC Paving; Concrete Curbs; Artificial Turf; Chain Link Fencing; Grading, in preparation for owner installed play structures and equipment; Exterior Painting.

Project Estimate: \$1,100,000

3. To bid on this Project, the Bidder is required to possess one or more of the following State of California contractors' license(s): **B**

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 February 28, 2024, and may be downloaded from the District's website, <https://www.srcsbondprogram.org/domain/16>, using the ["**Doing Business With Us**"] link.

6. **San Rafael City Schools will only receive bids submitted electronically.** Bids will be received until **3:00:00 p.m., March 19, 2024**, only at the following email address: bondprogram@srcs.org, after which time the bids will be opened and publicly read aloud via video conference. A link to the video conference will be provided by Addendum. Any bid that is submitted after this time shall be nonresponsive and returned to the bidder. **Each bidder is solely responsible for timely submission of its bid; the District is not responsible for any technological issues in a bidder's ability to timely submit its bid or portion thereof.** 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. Prior to publicly reading aloud bids at the video conference, the District reserves the right to verify genuineness of any bid security.

7. Pursuant to Public Contract Code section 20111.6, only prequalified bidders will be eligible to submit a bid for contracts \$1 million or more using or planning to use state bond funds. Any bid submitted by a bidder who is not prequalified shall be non-responsive and returned by email to the bidder.

8. 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.
9. 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 San Rafael City Schools, 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.
10. A mandatory pre-bid conference and site visit will be held on **Thursday, March 7, 2024, at 10:00 a.m. at Short Elementary School, 35 Marin Street, San Rafael, California**. All participants are required to sign in, in front of the Main Office, adjacent to the Marin Street entrance. The site visit is expected to take approximately one hour. Failure to attend or tardiness will render bid ineligible.
11. 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.
12. 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.
13. 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>>.
14. 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.
15. The District shall award the Contract, if it awards it at all, to the lowest responsive responsible bidder based on:

A. The base bid amount only.
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.

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.

San Rafael City Schools ("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"):

Short Elementary School ECE Development Project

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. The District has prequalified bidders pursuant to Public Contract Code section 20111.6 for contracts \$1 million or more using or planning to use state bond funds. Only prequalified bidders will be eligible to submit a bid for this Project. Any bid submitted by a bidder who is not prequalified shall be deemed nonresponsive and will not be considered. Moreover, any bid listing subcontractors holding C-4, C-7, C-10, C-16, C-20, C-34, C-36, C-38, C-42, C-43 or C-46 licenses who have not been prequalified shall be deemed non-responsive.
4. District will receive bids submitted electronically from bidders as stipulated in the Notice to Bidders. Email subject line must include the name of the Bidder, name of the Project, the Project Number and/or bid number, and time of bid opening. Bids must be electronically submitted to the following email address: bondprogram@srcs.org, by date and time shown in the Notice to Bidders. Each bidder is solely responsible for timely submission of its bid; the District is not responsible for any technological issues affecting a bidder's ability to timely submit its bid or portion thereof. Bid emails must attach all documents as required herein.
5. Bids will be opened and publicly read aloud via video conference. A link to the video conference will be provided by Addendum. Prior to publicly reading aloud bids at the video conference, the District reserves the right to verify the genuineness of any bid security.
6. 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.

7. 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.
8. Bids shall be clearly written and without erasure or deletions. District reserves the right to reject any bid containing erasures, deletions, or illegible contents.
9. 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 non-responsive 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. PDF of 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.
10. Bidders must submit with their bids a legible photocopy of (i) a cashier's check or (ii) a certified check payable to District, or (iii) 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 the 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. Bidder must deposit the original of the bid bond, cashier's check, or certified check in the mail on the same day as the bid opening. Bids submitted without necessary bid security will be deemed nonresponsive and will not be considered.
11. 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.
12. 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.

13. 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 non-responsive 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.
14. 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.
15. 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.
16. 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>.

17. Section 17076.11 of the Education Code requires school districts using funds allocated pursuant to the State of California School Facility Program for the construction and/or modernization of school building(s) to have a participation goal for disabled veteran business enterprises ("DVBE") of at least three percent (3%) per year of the overall dollar amount expended on projects that receive state funding or demonstrate its good faith effort to solicit DVBE participation in this Contract. In order to meet this requirement by demonstrating a good faith effort, Bidder must advertise for DVBE-certified subcontractors and suppliers before submitting its Bid. For any project that is at least partially state-funded, the lowest responsive responsible Bidder awarded the Contract must submit certification of compliance with the procedures for implementation of DVBE contracting goals with its signed Agreement. DVBE Certification form is attached. Do not submit this form with your Bid.
18. 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 no 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.
19. 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.
20. 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.

21. All questions about the meaning or intent of the Contract Documents are to be directed via email to the District to bondprogram@srcs.org. Interpretations or clarifications considered necessary by the District in response to such questions will be issued in writing by Addenda and emailed, to all parties recorded by the District as having received the Contract Documents and posted on the District's website at <https://www.srcsbondprogram.org/domain/16>. Questions received less than **SEVEN (7)** calendar days prior to the date for opening bids 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.
22. Addenda may also be issued to modify other parts of the Contract Documents as deemed advisable by the District.
23. 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.
24. 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.
25. 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.
26. Discrepancies between written words and figures, or words and numerals, will be resolved in favor of figures or numerals.
27. Any bid protest by any Bidder regarding any other bid must be submitted in writing to the District, before 5:00 p.m. 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.
28. The Bidder to whom Contract is awarded shall execute and submit the following documents by 5:00 p.m. of the **SEVENTH (7th)** calendar day following the date of the Notice of Award. Failure to properly and timely submit these documents entitles District to reject the bid as nonresponsive.
- a. Agreement: To be executed by the successful Bidder. Submit one (1) copy, bearing an electronic signature which shall be deemed to be the equivalent of the actual original signature..
 - b. Performance Bond (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.
 - c. 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.

- d. Insurance Certificates and Endorsements as required.
 - e. Workers' Compensation Certification.
 - f. Prevailing Wage and Related Labor Requirements Certification.
 - g. Disabled Veteran Business Enterprise Participation Certification.
 - h. Drug-Free Workplace Certification.
 - i. Tobacco-Free Environment Certification.
 - j. Hazardous Materials Certification.
 - k. Lead-Based Materials Certification.
 - l. Imported Materials Certification.
 - m. Criminal Background Investigation/Fingerprinting Certification.
 - n. Registered Subcontractors List: Must include Department of Industrial Relations (DIR) registration number of each subcontractor for all tiers.
29. Time for Completion: 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.
- 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.
- 30. 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.
- 31. 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.
- 32. Prior to the award of the Contract, the 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.

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 San Rafael City Schools ("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) Survey of Site.

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

BID FORM AND PROPOSAL

To: Governing Board of the San Rafael City Schools ("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. 24-08, for the following project known as:

Short Elementary School ECE Development Project

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

_____ dollars \$ _____

BASE BID

Bidder acknowledges and agrees that the Base Bid accounts for any and all Allowance(s).

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

Additional Detail Regarding Calculation of Base Bid

1. **Allowance.** The Bidder's Base Bid shall include the following Allowances for the Tasks/Work as noted here:

Task/Work	Allowance Value
Allowance for Unforeseen Conditions	\$100,000
Total Allowance Value	\$100,000

The Allowance Value for an Allowance Item includes the direct cost of labor, materials, equipment, transportation, taxes and insurance associated with the applicable Allowance Item. All other costs, including Contractor's overall project management and general conditions costs, overhead and fee, are deemed to be included in the Base Bid, and are not subject to adjustment regardless of the actual amount of the Allowance Item.

The District shall have sole discretion to authorize all expenditures from the Allowances. The District shall process expenditures from the Allowances in the form of an Allowance Expenditure Directive ("AED"). Any unused Allowance or unused portion thereof shall be deducted from the Contract Price to the benefit of the District.

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:
 - PDF of 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 **B** 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 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.

14. 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.
15. 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.
16. 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.
17. 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: _____

Fax 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 San Rafael City Schools ("District") of Marin 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: _____ ("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: Short Elementary School ECE Development Project _____

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: _____

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: Short Elementary School ECE Development Project_____

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 San Rafael City Schools, 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: _____

ATTACHMENTS:

1.

2.

3.

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.: Short Elementary School ECE Development Project/24-08
between the San Rafael City Schools ("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.: Short Elementary School ECE Development Project/24-08 _____
between the San Rafael City Schools ("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.: Short Elementary School ECE Development Project/24-08
between the San Rafael City Schools ("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.: Short Elementary School ECE Development Project/24-08_____
_____ between the San Rafael City Schools ("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.: Short Elementary School ECE Development Project/24-08_____ between the San Rafael City Schools ("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

HAZARDOUS MATERIALS CERTIFICATION

PROJECT/CONTRACT NO.: Short Elementary School ECE Development Project/24-08 _____
between San Rafael City Schools ("District") and _____
_____ ("Contractor" or "Bidder") ("Contract" or "Project").

1. Contractor hereby certifies that no asbestos, or asbestos-containing materials, polychlorinated biphenyl (PCB), or any material listed by the federal or state Environmental Protection Agency or federal or state health agencies as a hazardous material, or any other material defined as being hazardous under federal or state laws, rules, or regulations, ("New Hazardous Material"), shall be furnished, installed, or incorporated in any way into the Project or in any tools, devices, clothing, or equipment used to affect any portion of Contractor's work on the Project for District.
2. Contractor further certifies that it has instructed its employees with respect to the above-mentioned standards, hazards, risks, and liabilities.
3. Asbestos and/or asbestos-containing material shall be defined as all items containing but not limited to chrysotile, crocidolite, amosite, anthophyllite, tremolite, and actinolite. Any or all material containing greater than one-tenth of one percent (0.1%) asbestos shall be defined as asbestos-containing material.
4. Any disputes involving the question of whether or not material is New Hazardous Material shall be settled by electron microscopy or other appropriate and recognized testing procedure, at the District's determination. The costs of any such tests shall be paid by Contractor if the material is found to be New Hazardous Material.
5. All Work or materials found to be New Hazardous Material or Work or material installed with equipment containing New Hazardous Material will be immediately rejected and this Work will be removed at Contractor's expense at no additional cost to the District.
6. Contractor has read and understood the document titled Hazardous Materials Procedures & Requirements, and shall comply with all the provisions outlined therein. Contractor certifies that it is knowledgeable of, and shall comply with, all laws applicable to the Work including, but not limited to, all federal, state, and local laws, statutes, standards, rules, regulations, and ordinances applicable to the Work.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

LEAD-BASED MATERIALS CERTIFICATION

PROJECT/CONTRACT NO.: Short Elementary School ECE Development Project/24-08 _____
between the San Rafael City Schools ("District") and _____
_____ ("Contractor" or "Bidder") ("Contract" or "Project").

This certification provides notice to the Contractor that:

- (1) Contractor's work may disturb lead-containing building materials.
- (2) Contractor shall notify the District if any work may result in the disturbance of lead-containing building materials.
- (3) Contractor shall comply with the Renovation, Repair and Painting Rule, if lead-based paint is disturbed in a six-square-foot or greater area indoors or a 20-square-foot or greater area outdoors.

1. Lead as a Health Hazard

Lead poisoning is recognized as a serious environmental health hazard facing children today. Even at low levels of exposure, much lower than previously believed, lead can impair the development of a child's central nervous system, causing learning disabilities, and leading to serious behavioral problems. Lead enters the environment as tiny lead particles and lead dust disburses when paint chips, chalks, peels, wears away over time, or is otherwise disturbed. Ingestion of lead dust is the most common pathway of childhood poisoning; lead dust gets on a child's hands and toys and then into a child's mouth through common hand-to-mouth activity. Exposures may result from construction or remodeling activities that disturb lead paint, from ordinary wear and tear of windows and doors, or from friction on other surfaces.

Ordinary construction and renovation or repainting activities carried out without lead-safe work practices can disturb lead-based paint and create significant hazards. Improper removal practices, such as dry scraping, sanding, or water blasting painted surfaces, are likely to generate high volumes of lead dust.

Because the Contractor and its employees will be providing services for the District, and because the Contractor's work may disturb lead-containing building materials, CONTRACTOR IS HEREBY NOTIFIED of the potential presence of lead-containing materials located within certain buildings utilized by the District. All school buildings built prior to 1978 are presumed to contain some lead-based paint until sampling proves otherwise.

2. Overview of California Law

Education Code section 32240 et seq. is known as the Lead-Safe Schools Protection Act. Under this act, the Department of Health Services is to conduct a sample

survey of schools in the State of California for the purpose of developing risk factors to predict lead contamination in public schools. (Ed. Code, § 32241.)

Any school that undertakes any action to abate existing risk factors for lead is required to utilize trained and state-certified contractors, inspectors, and workers. (Ed. Code, § 32243, subd. (b).) Moreover, lead-based paint, lead plumbing, and solders, or other potential sources of lead contamination, shall not be utilized in the construction of any new school facility or the modernization or renovation of any existing school facility. (Ed. Code, § 32244.)

Both the Federal Occupational Safety and Health Administration ("Fed/OSHA") and the California Division of Occupational Safety and Health ("Cal/OSHA") have implemented safety orders applicable to all construction work where a contractor's employee may be occupationally exposed to lead.

The OSHA Regulations apply to all construction work where a contractor's employee may be occupationally exposed to lead. The OSHA Regulations contain specific and detailed requirements imposed on contractors subject to those regulations. The OSHA Regulations define construction work as work for construction, alteration, and/or repair, including painting and decorating. Regulated work includes, but is not limited to, the following:

- Demolition or salvage of structures where lead or materials containing lead are present;

- Removal or encapsulation of materials containing lead;

- New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead;

- Installation of products containing lead;

- Lead contamination/emergency cleanup;

- Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed; and

- Maintenance operations associated with the construction activities described in the subsection.

Because it is assumed by the District that all painted surfaces (interior as well as exterior) within the District contain some level of lead, it is imperative that the Contractor, its workers and subcontractors fully and adequately comply with all applicable laws, rules and regulations governing lead-based materials (including title 8, California Code of Regulations, section 1532.1).

Contractor shall notify the District if any Work may result in the disturbance of lead-containing building materials. Any and all Work that may result in the disturbance of lead-containing building materials shall be coordinated

through the District. A signed copy of this Certification shall be on file prior to beginning Work on the Project, along with all current insurance certificates.

3. Renovation, Repair and Painting Rule, Section 402(c)(3) of the Toxic Substances Control Act

The EPA requires lead safe work practices to reduce exposure to lead hazards created by renovation, repair and painting activities that disturb lead-based paint. Pursuant to the Renovation, Repair and Painting Rule (RRP), renovations in homes, childcare facilities, and schools built prior to 1978 must be conducted by certified renovations firms, using renovators with training by a EPA-accredited training provider, and fully and adequately complying with all applicable laws, rules and regulations governing lead-based materials, including those rules and regulations appearing within title 40 of the Code of Federal Regulations as part 745 (40 CFR 745).

The RRP requirements apply to all contractors who disturb lead-based paint in a six-square-foot or greater area indoors or a 20-square-foot or greater area outdoors. If a DPH-certified inspector or risk assessor determines that a home constructed before 1978 is lead-free, the federal certification is not required for anyone working on that particular building.

4. Contractor's Liability

If the Contractor fails to comply with any applicable laws, rules, or regulations, and that failure results in a site or worker contamination, the Contractor will be held solely responsible for all costs involved in any required corrective actions, and shall defend, indemnify, and hold harmless the District, pursuant to the indemnification provisions of the Contract, for all damages and other claims arising therefrom.

If lead disturbance is anticipated in the Work, only persons with appropriate accreditation, registrations, licenses, and training shall conduct this Work.

It shall be the responsibility of the Contractor to properly dispose of any and all waste products, including, but not limited to, paint chips, any collected residue, or any other visual material that may occur from the prepping of any painted surface. It will be the responsibility of the Contractor to provide the proper disposal of any hazardous waste by a certified hazardous waste hauler. This company shall be registered with the Department of Transportation (DOT) and shall be able to issue a current manifest number upon transporting any hazardous material from any school site within the District.

The Contractor shall provide the District with any sample results prior to beginning Work, during the Work, and after the completion of the Work. The District may request to examine, prior to the commencement of the Work, the lead training records of each employee of the Contractor.

THE CONTRACTOR HEREBY ACKNOWLEDGES, UNDER PENALTY OF PERJURY, THAT IT:

1. HAS RECEIVED NOTIFICATION OF POTENTIAL LEAD-BASED MATERIALS ON THE OWNER'S PROPERTY;
2. IS KNOWLEDGEABLE REGARDING AND WILL COMPLY WITH ALL APPLICABLE LAWS, RULES, AND REGULATIONS GOVERNING WORK WITH, AND DISPOSAL, OF LEAD.

THE UNDERSIGNED WARRANTS THAT HE/SHE HAS THE AUTHORITY TO SIGN ON BEHALF OF AND BIND THE CONTRACTOR. THE DISTRICT MAY REQUIRE PROOF OF SUCH AUTHORITY.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

CRIMINAL BACKGROUND INVESTIGATION
/FINGERPRINTING CERTIFICATION

PROJECT/CONTRACT NO.: Short Elementary School ECE Development Project/24-08 _____
between the San Rafael City Schools ("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 Education 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 Education 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.

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

[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: _____

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.

END OF DOCUMENT

REGISTERED SUBCONTRACTORS LIST
(LABOR CODE SECTION 1771.1)

PROJECT: Short Elementary School ECE Development Project/24-08 _____

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: _____

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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

NOTICE OF AWARD

Dated: _____ 20__

To: _____ (Contractor)

(Address)

From: Governing Board ("Board") of the San Rafael City Schools ("District")

Re: _____, Project No. _____ ("Project").

Contractor has been awarded the Contract for the above-referenced Project on _____, 20__, by action of the District's Board.

The Contract Price is _____ Dollars (\$_____), and includes alternates _____.

You must comply with the following conditions precedent within **SEVEN (7)** calendar days of the date of this Notice of Award.

The Contractor shall execute and submit the following documents by 5:00 p.m. of the **SEVENTH (7th)** calendar day following the date of the Notice of Award.

- a. Agreement: To be executed by successful Bidder. Submit three (3) copies, each bearing an 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 & 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. Disabled Veteran Business Enterprise Participation Certification.
- i. Drug-Free Workplace Certification.
- j. Tobacco-Free Environment Certification.

- k. Hazardous Materials Certification.
- l. Lead-Based Materials Certification.
- m. Imported Materials Certification.
- n. Criminal Background Investigation/Fingerprinting Certification.

Failure to comply with these conditions within the time specified will entitle District to consider your bid abandoned, to annul this Notice of Award, and to declare your Bid Security forfeited, as well as any other rights the District may have against the Contractor.

After you comply with those conditions, District will return to you one fully signed counterpart of the Agreement.

SAN RAFAEL CITY SCHOOLS

BY: _____

NAME: _____

TITLE: _____

END OF DOCUMENT

AGREEMENT

THIS AGREEMENT IS MADE AND ENTERED INTO THIS _____ DAY OF _____, 20____, by and between the San Rafael City Schools ("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:

("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 **ninety (90)** consecutive calendar days ("Contract Time") from the date specified in the District's Notice to Proceed.
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 **one thousand dollars (\$1,000)** 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 **B** 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.

[SIGNATURES ON FOLLOWING PAGE]

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

[CONTRACTOR NAME]

SAN RAFAEL CITY SCHOOLS

By: _____

By: _____

Title: _____

Title: _____

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

NOTICE TO PROCEED

Dated: _____, 20____

TO: _____
("Contractor")

ADDRESS: _____

PROJECT: Short Elementary School ECE Development Project/24-08

PROJECT/CONTRACT NO.: Short Elementary School ECE Development Project/24-08
between the San Rafael City Schools and Contractor ("Contract").

You are notified that the Contract Time under the above Contract will commence to run on _____, 20____. By that date, you are to start performing your obligations under the Contract Documents. In accordance with the Agreement executed by Contractor, the date of completion is _____, 20____.

You must submit the following documents by 5:00 p.m. of the TENTH (10th) calendar day following the date of this Notice to Proceed:

- a. Contractor's preliminary schedule of construction.
- b. Contractor's preliminary schedule of values for all of the Work.
- c. Contractor's preliminary schedule of submittals, including Shop Drawings, Product Data, and Samples submittals
- d. Contractor's Safety Plan specifically adapted for the Project.
- e. Registered Subcontractors List: A complete subcontractors list for all tiers, including the name, Department of Industrial Relations registration number, and portion of work.

Thank you. We look forward to a very successful Project.

SAN RAFAEL CITY SCHOOLS

BY: _____

NAME: _____

TITLE: _____

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 San Rafael City Schools ("District"), whose address is 310 Nova Albion Way, San Rafael, California 94903, 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:

1. 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 San Rafael City Schools School District, and shall designate Contractor as beneficial owner.

2. 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.
3. 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.

4. Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account, and all expenses of 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.
5. 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.
6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from District to Escrow Agent that District consents to withdrawal of amount sought to be withdrawn by Contractor.
7. 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.
8. 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.
9. 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]

10. 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

SAN RAFAEL CITY SCHOOLS

**SHORT ELEMENTARY SCHOOL ECE
DEVELOPMENT PROJECT, NO. 24-08
ESCROW AGREEMENT IN LIEU OF
RETENTION
DOCUMENT 00 57 00-3**

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 San Rafael City Schools, ("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:

Short Elementary School ECE Development Project/24-08

("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 San Rafael City Schools, ("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:

Short Elementary School ECE Development Project/24-08 ("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 FORM

San Rafael City Schools
310 Nova Albion Way
San Rafael, CA 94903

ALLOWANCE EXPENDITURE DIRECTIVE**Project:** _____**Date:** _____**Bid No.:** _____**DSA File No.:** _____**DSA Appl. No.:** _____

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

Owner Name, Address, Telephone:**Contractor Name, Address, Telephone:**

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

Total Contract Allowance Amount:

\$

Amount of Previously Approved Allowance Expenditure Directive(s):

\$

SAN RAFAEL CITY SCHOOLS

**SHORT ELEMENTARY SCHOOL ECE
 DEVELOPMENT PROJECT, NO. 24-08
 ALLOWANCE EXPENDITURE DIRECTIVE
 DOCUMENT 00 63 40-1**

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:

DISTRICT:

SAN RAFAEL CITY SCHOOLS

Date: _____

By: _____
[Print Name and Title here]

CONTRACTOR:

Date: _____

By: _____
[Print Name and Title here]

ARCHITECT:

Date: _____

By: _____
[Print Name and Title here]

PROJECT INSPECTOR:

Date: _____

By: _____
[Print Name and Title here]

END OF DOCUMENT

SAN RAFAEL CITY SCHOOLS

**SHORT ELEMENTARY SCHOOL ECE
DEVELOPMENT PROJECT, NO. 24-08
ALLOWANCE EXPENDITURE DIRECTIVE
DOCUMENT 00 63 40-2**

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): \$ _____

SAN RAFAEL CITY SCHOOLS

**SHORT ELEMENTARY SCHOOL ECE
DEVELOPMENT PROJECT, NO. 24-08
DAILY FORCE ACCOUNT REPORT
DOCUMENT 00 63 47-1**

- 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>Add Bond and Insurance</u> , not to exceed two percent (2%) of Item (f)	
(h)	<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

San Rafael City Schools
310 Nova Albion Way
San Rafael, CA 94903

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>
(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</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	

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SAN RAFAEL CITY SCHOOLS

**SHORT ELEMENTARY SCHOOL ECE
DEVELOPMENT PROJECT, NO. 24-08
PROPOSED CHANGE ORDER
DOCUMENT 00 63 57-1**

	WORK PERFORMED BY CONTRACTOR	<u>ADD</u>	<u>DEDUCT</u>
(a)	<u>Material</u> (attach 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>Add General Conditions</u> (if Time is Compensable) (attach supporting documentation)		
(e)	<u>Subtotal</u>		
(f)	<u>Add Overhead and Profit for Contractor, not to exceed fifteen percent (15%) of Item (e)</u>		
(g)	<u>Subtotal</u>		
(h)	<u>Add Bond and Insurance, not to exceed two percent (2%) of Item (g)</u>		
(i)	<u>TOTAL</u>		
(j)	<u>Time</u> (zero unless indicated; "TBD" not permitted)	<u>Calendar Days</u>	

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

SAN RAFAEL CITY SCHOOLS

**SHORT ELEMENTARY SCHOOL ECE
DEVELOPMENT PROJECT, NO. 24-08
PROPOSED CHANGE ORDER
DOCUMENT 00 63 57-2**

CHANGE ORDER FORM

San Rafael City Schools
310 Nova Albion Way
San Rafael, CA 94903

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:	\$ \$ \$ \$	

SAN RAFAEL CITY SCHOOLS

**SHORT ELEMENTARY SCHOOL ECE
DEVELOPMENT PROJECT, NO. 24-08
CHANGE ORDER FORM
DOCUMENT 00 63 63-1**

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 therein, 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. 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 change order is subject to approval by the governing board of this District and must be signed by the District. Until such time as this change order is approved by the District's governing board and executed by a duly authorized District representative, this change order is not effective and not binding.

It is expressly understood that the compensation and time, if any, granted herein represent a full accord and satisfaction for any and all time and cost impacts of the items herein, and Contractor waives any and all further compensation or time extension 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, resulting from additional time required on the project or resulting from delay to the project including without limitation, cumulative impacts. Any costs, expenses, damages or time extensions not included are deemed waived.

Signatures:

District:

Contractor:

[Name] Date

[Name] Date

Architect:

Project Inspector:

[Name] Date

[Name] Date

END OF DOCUMENT

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 SAN RAFAEL CITY SCHOOLS ("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 Marin, 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 * * *

SAN RAFAEL CITY SCHOOLS

Signature: _____

Print Name: _____

Title: _____

CONTRACTOR: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

GUARANTEE FORM

_____ ("Contractor") hereby agrees that the _____
_____ ("Work" of Contractor) which Contractor has installed for the San Rafael City
Schools ("District") for the following project:

PROJECT: Short Elementary School ECE Development Project/24-08

("Project" or "Contract") has been performed in accordance with the requirements of the
Contract Documents and that the Work as installed will fulfill the requirements of the
Contract Documents.

The undersigned agrees to repair or replace any or all of such Work that may prove to be
defective in workmanship or material together with any other adjacent Work that may be
displaced in connection with such replacement within a period of _____ 2 _____
year(s) from the date of completion as defined in Public Contract Code section 7107,
subdivision (c), ordinary wear and tear and unusual abuse or neglect excepted. The date of
completion is _____, 20____.

In the event of the undersigned's failure to comply with the above-mentioned conditions
within a reasonable period of time, as determined by the District, but not later than seven
(7) days after being notified in writing by the District, the undersigned authorizes the
District to proceed to have said defects repaired and made good at the expense of the
undersigned. The undersigned shall pay the costs and charges therefor upon demand.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

Representatives to be contacted for service subject to terms of Contract:

Name: _____

Address: _____

Phone No.: _____

Email: _____

END OF DOCUMENT

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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(s): The Allowance Item(s) identified in the Bid Form and Proposal and included in the Contract Price. Any unused portion of the Allowance will revert to the District documented by a deductive Change Order. 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.

1.1.3 Allowance Expenditure Directive: Written authorization for expenditure of an Allowance, if any. Contractor shall not bill for or be due any portion of an 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 executed an Allowance Expenditure Directive incorporating that work.

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

1.1.5 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.

1.1.6 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**.

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

1.1.8 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.

1.1.9 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.

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

1.1.11 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.

1.1.12 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.

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

1.1.14 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:

- 1.1.14.1** Notice to Bidders
- 1.1.14.2** Instructions to Bidders
- 1.1.14.3** Bid Form and Proposal
- 1.1.14.4** Bid Bond
- 1.1.14.5** Designated Subcontractors List
- 1.1.14.6** Site Visit Certification (if a site visit was required)
- 1.1.14.7** Non-Collusion Declaration
- 1.1.14.8** Notice of Award
- 1.1.14.9** Notice to Proceed
- 1.1.14.10** Agreement
- 1.1.14.11** Escrow of Bid Documentation
- 1.1.14.12** Escrow Agreement for Security Deposits in Lieu of Retention (if applicable)
- 1.1.14.13** Performance Bond
- 1.1.14.14** Payment Bond (Contractor's Labor & Material Bond)
- 1.1.14.15** General Conditions
- 1.1.14.16** Special Conditions (if applicable)
- 1.1.14.17** Project Labor Agreement (if applicable)
- 1.1.14.18** Hazardous Materials Procedures and Requirements
- 1.1.14.19** Workers' Compensation Certification
- 1.1.14.20** Prevailing Wage Certification

- 1.1.14.21** Disabled Veteran Business Enterprise Participation Certification (if applicable)
- 1.1.14.22** Drug-Free Workplace Certification (if applicable)
- 1.1.14.23** Tobacco-Free Environment Certification
- 1.1.14.24** Hazardous Materials Certification (if applicable)
- 1.1.14.25** Lead-Based Materials Certification (if applicable)
- 1.1.14.26** Imported Materials Certification (if applicable)
- 1.1.14.27** Criminal Background Investigation/Fingerprinting Certification
- 1.1.14.28** Roofing Project Certification (if applicable)
- 1.1.14.29** Registered Subcontractors List
- 1.1.14.30** Iran Contracting Act Certification (if applicable)
- 1.1.14.31** Federal Debarment Certification (if applicable)
- 1.1.14.32** Federal Byrd Anti-Lobbying Certification (if applicable)
- 1.1.14.33** Post Bid Interview
- 1.1.14.34** All Plans, Technical Specifications, and Drawings
- 1.1.14.35** Any and all addenda to any of the above documents
- 1.1.14.36** Any and all change orders or written modifications to the above documents if approved in writing by the District

1.1.15Contract Price: The total monies payable to the Contractor under the terms and conditions of the Contract Documents.

1.1.16Contract Time: The time period stated in the Agreement for the completion of the Work.

1.1.17Contractor: 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.

1.1.18Daily 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.

1.1.19Day(s): Unless otherwise designated, day(s) means calendar day(s).

1.1.20Department 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.

1.1.21Design Professional in General Responsible Charge: See definition of **Architect** above.

1.1.22Dispute: 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.

1.1.23District: 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,

1.1.23.1 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

1.1.23.2 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.

1.1.24 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.

1.1.25 DSA: Division of the State Architect.

1.1.26 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.

1.1.27 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.

1.1.28 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.

1.1.29 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.

1.1.30 Plans: See **Drawings**.

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

1.1.32 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.

1.1.33Product 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.

1.1.34Program 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.

1.1.35Project: The planned undertaking as provided for in the Contract Documents.

1.1.36Project 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.

1.1.37Project 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.

1.1.38Proposed 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.

1.1.39Provide: Shall include "provide complete in place," that is, "furnish and install," and "provide complete and functioning as intended in place" unless specifically stated otherwise.

1.1.40Qualified SWPPP Practitioners (or "QSP"): certified personnel that attended a State Water Resources Control Board sponsored or approved training class and passed the qualifying exam.

1.1.41Record 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**.

1.1.42Request 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.

1.1.43Request 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.

1.1.44 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").

1.1.45 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.

1.1.46 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.

1.1.47 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.

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

1.1.49 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.

1.1.50 State: The State of California.

1.1.51 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.

1.1.52 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.

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

1.1.54 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.

1.1.55 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; Venue

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.

To the fullest extent permitted by California law, the county in which the District administration office is located shall be the venue for any action or proceeding that may be brought or arise out of, in connection with or by reason of this Contract.

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

Unless the Special Conditions contain different provisions, Contractor shall not substitute different items for any items identified in the Contract Documents without prior written approval of the District.

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.

1.8.10[RESERVED]

2. [RESERVED]

3. ARCHITECT

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.

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.

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

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

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.

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.

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 represents and warrants that Contractor is an independent contractor or business entity that is: (i) free from the control and direction of the District in connection with the performance of the Services, (ii) performing Services that are outside the usual course of the District's business, and (iii) customarily engaged in an independently established trade, occupation, or business of the same nature as that involved in the Services performed, District being interested only in the results obtained. Contractor understands and agrees that it and all of its employees and its Subcontractors shall not be considered officers, employees, agents, partner, or joint venture of the District, and are not entitled to benefits of any kind or nature normally provided employees of the District and/or to which District's employees are normally entitled, including, but not limited to, State Unemployment Compensation or Worker's Compensation. Contractor shall assume full responsibility for payment of all federal, state, and local taxes or contributions, including unemployment insurance, social security, and income taxes with respect to Consultant's employees. Contractor is and shall at all times be wholly responsible for the manner in which it, its agents, 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. 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 [RESERVED]

6.1.6 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.

6.1.7 [RESERVED]

6.1.8 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.

6.13.5 [RESERVED]

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

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

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

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.

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.

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.

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:

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

7.1.2 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

7.1.3 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.

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

7.1.4 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.

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

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

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

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.

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.

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.

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.

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.

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

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.

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.

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.

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.

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.

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.

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.

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."

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

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

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

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

10.1.1.5 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.

13.1.6Pollution 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.

13.1.7Proof 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.

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	\$2,000,000 per occurrence; \$4,000,000 aggregate
Automobile Liability	Any Auto – Combined Single Limit	\$1,000,000
Workers’ Compensation		Statutory limits pursuant to State law
Employers’ 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 **ONE (1)** year 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 **ONE (1)** 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 of 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 Exceeds twelve (12) days of delay per year.

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, including a Force Majeure event, 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 Force Majeure

"Force Majeure" means any event or circumstance unknown at the time of contracting that is beyond the parties' control and makes performance of the contract impractical or impossible. The Party seeking to have its performance obligation(s) excused must demonstrate that there was such an insuperable interference occurring without the party's intervention as could not have been prevented by the exercise of prudence, diligence, and care, by providing prompt notice to the other Party, including full particulars of such event, of its inability to perform its obligations due to such event, following commencement of the claiming Party's inability to so perform its obligations. To the extent satisfying these conditions, Force Majeure events include the following:

acts of God, war, civil unrest, epidemic, fire, smoke, volcanic eruption, earthquake, strike, unusually severe weather, flood, or shortage of transportation facilities, lock out, or commandeering of materials, product, plant, or facilities by the government. Force Majeure shall not be based on a Party's financial inability to perform under this Agreement unless there exists extreme and unreasonable difficulty, expense, injury, or loss involved. A Force Majeure event does not include an act of negligence or intentional wrongdoing by a Party. Any Party claiming a Force Majeure event shall use reasonable diligence to remove the condition that prevents performance and shall not be entitled to suspend performance of its obligations in any greater scope or for any longer duration than is required by the Force Majeure event. Each Party shall use its best efforts to mitigate the effects of such Force Majeure event, remedy its inability to perform, and resume full performance of its obligations hereunder. No obligation that arose before the Force Majeure event that could and should have been fully performed before such Force Majeure event is excused as a result of such Force Majeure event.

16.5 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.

17.1.4A 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

17.3.1A 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

17.4.1A 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 Allowances

If there is an Allowance, then Contractor shall not bill for or be due any portion of an 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 executed an Allowance Expenditure Directive incorporating that work. 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 the Allowance. No overhead and profit shall be added to the Allowance Expenditure Directive.

Any unused portion of the Allowance will revert to the District documented by a deductive Change Order. Contractor 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.

17.7.5 Unknown and/or Unforeseen Conditions

Separate from what is provided in the Allowance, if Contractor requests 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.

17.7.6 Time to Submit Proposed Change Order

Contractor shall submit its PCO, using Document 00 63 57 (Proposed Change Order Form), 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.

17.7.7 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.

	WORK PERFORMED OTHER THAN BY CONTRACTOR	ADD	DEDUCT
(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 (if Time is Compensable)</u> (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	

	WORK PERFORMED BY CONTRACTOR	ADD	DEDUCT
(a)	<u>Material</u> (attach 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>Add General Conditions Cost (if Time is Compensable)</u> (attach supporting documentation)		
(e)	<u>Subtotal</u>		
(f)	<u>Add Overhead and Profit for Contractor</u> , not to exceed fifteen percent (15%) of Item (e)		
(g)	<u>Subtotal</u>		
(h)	<u>Add Bond and Insurance</u> , not to exceed two percent (2%) of Item (g)		
(i)	<u>TOTAL</u>		

(j)	Time (zero unless indicated; "TBD" not permitted)	Calendar Days
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1.1.2 Mandatory Use of Forms. Contractor shall only submit PCOs by completing Document 00 63 57 (Proposed Change Order Form). Contractor acknowledges and agrees that use of this specific and consistent format is essential to District's evaluation of PCOs. Accordingly, Contractor waives, releases, and discharges any right to assert or claim any entitlement to an adjustment of the Contract Price and/or Time for any purported PCO that does not comply with Document 00 63 57 (Proposed Change Order Form).

1.1.3 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>.

1.1.4 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.

1.1.5 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.

1.1.6 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.

1.1.7 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.

1.2 Change Order Certification

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

1.2.1.1 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.

1.2.1.2 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.

1.2.2 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.

1.2.3 Mandatory Use of Forms. Contractor shall only submit Change Orders by completing Document 00 63 63 (Change Order Form). Contractor acknowledges and agrees that use of this specific and consistent format is essential to District's processing of Change Orders. Accordingly, Contractor waives, releases, and discharges any right to assert or claim any entitlement to an adjustment of the Contract Price and/or Time for any change that does not comply with Document 00 63 63 (Change Order Form).

1.3 Determination of Change Order Cost

1.3.1 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:

1.3.1.1 District acceptance of a PCO;

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

1.3.1.3 By agreement between District and Contractor.

1.4 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.

1.5 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.

1.6 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.

1.7 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.

1.8 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.

1.9 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.

1.10 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.

1.11 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.

2. REQUEST FOR INFORMATION

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.

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.

3. PAYMENTS

3.1 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.

3.2 Applications for Progress Payments

3.2.1 Procedure for Applications for Progress Payments

3.2.1.1 Application for Progress Payment

3.2.1.1.1 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:

3.2.1.1.1.1 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;

3.2.1.1.1.2 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;

3.2.1.1.1.3 The balance that will be due to each of such entities after said payment is made;

3.2.1.1.1.4 A certification that the As-Built Drawings and annotated Specifications are current;

3.2.1.1.1.5 Itemized breakdown of work done for the purpose of requesting partial payment;

3.2.1.1.1.6 An updated and acceptable construction schedule in conformance with the provisions herein;

3.2.1.1.1.7 The additions to and subtractions from the Contract Price and Contract Time;

3.2.1.1.1.8 A total of the retentions held;

3.2.1.1.1.9 Material invoices, evidence of equipment purchases, rentals, and other support and details of cost as the District may require from time to time;

3.2.1.1.1.10 The percentage of completion of the Contractor's Work by line item;

3.2.1.1.1.11 Schedule of Values updated from the preceding Application for Payment;

3.2.1.1.1.12 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;

3.2.1.1.1.13 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

3.2.1.1.1.14 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.

3.2.1.1.1.15 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.

3.2.1.1.1.16 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:

3.2.1.1.1.16.1 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

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

3.2.1.1.2 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.

3.2.2 Prerequisites for Progress Payments

3.2.2.1 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:

3.2.2.1.1 Installation of the Project sign;

3.2.2.1.2 Installation of field office;

3.2.2.1.3 Installation of temporary facilities and fencing;

3.2.2.1.4 Schedule of Values;

3.2.2.1.5 Contractor's Construction Schedule;

- 3.2.2.1.6** Schedule of unit prices, if applicable;
- 3.2.2.1.7** Submittal Schedule;
- 3.2.2.1.8** Receipt by Architect of all submittals due as of the date of the payment application;
- 3.2.2.1.9** Copies of necessary permits;
- 3.2.2.1.10** Copies of authorizations and licenses from governing authorities;
- 3.2.2.1.11** Initial progress report;
- 3.2.2.1.12** Surveyor qualifications;
- 3.2.2.1.13** Written acceptance of District's survey of rough grading, if applicable;
- 3.2.2.1.14** List of all Subcontractors, with names, license numbers, telephone numbers, and Scope of Work;
- 3.2.2.1.15** All bonds and insurance endorsements; and
- 3.2.2.1.16** Resumes of Contractor's project manager, and if applicable, job site secretary, record documents recorder, and job site superintendent.

3.2.2.2 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.

3.2.2.3 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.

3.3 Progress Payments

3.3.1 District's Approval of Application for Payment

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

- 3.3.1.1.1** 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.
- 3.3.1.1.2** 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.

3.3.1.1.3 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.

3.3.1.2 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:

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

3.3.1.2.2 Results of subsequent tests and inspections,

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

3.3.1.2.4 Specific qualifications expressed by the Architect.

3.3.1.3 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.

3.3.2 Payments to Contractor

3.3.2.1 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.

3.3.2.2 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.

3.3.2.3 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.

3.3.3 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.

3.4 Decisions to Withhold Payment

3.4.1 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:

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

3.4.1.2 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.

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

3.4.1.4 Liquidated damages assessed against the Contractor.

3.4.1.5 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.

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

3.4.1.7 Unsatisfactory prosecution of the Work by the Contractor.

3.4.1.8 Failure to store and properly secure materials.

3.4.1.9 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.

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

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

3.4.1.12 Unauthorized deviations from the Contract Documents.

3.4.1.13 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.

3.4.1.14 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.

3.4.1.15 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.

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

3.4.1.17 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.

3.4.1.18 Failure to properly maintain or clean up the Site.

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

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

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

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

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

3.4.1.24 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.

3.4.2 Reallocation of Withheld Amounts

3.4.2.1 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.

3.4.2.2 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.

3.4.3 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.

3.5 Subcontractor Payments

3.5.1 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.

3.5.2 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.

3.5.3 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.

4. COMPLETION OF THE WORK

4.1 Completion

4.1.1 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.

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

4.1.3 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.

4.1.4 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.

4.2 Close-Out/Certification Procedures

4.2.1 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.

4.2.2 Close-Out/Certification Requirements

4.2.2.1 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.

4.2.2.2 Record Drawings and Record Specifications

4.2.2.2.1 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.

4.2.2.2.2 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.

4.2.2.2.3 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.

4.2.2.3 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.

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

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

4.2.2.6 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.

4.3 Final Inspection

4.3.1 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.

4.3.2 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.

4.3.3 Final Inspection Requirements

4.3.3.1 Before calling for final inspection, Contractor shall determine that the following have been performed:

- 4.3.3.1.1** The Work has been completed.
- 4.3.3.1.2** All life safety items are completed and in working order.
- 4.3.3.1.3** 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.
- 4.3.3.1.4** Electrical circuits scheduled in panels and disconnect switches labeled.
- 4.3.3.1.5** Painting and special finishes complete.
- 4.3.3.1.6** Doors complete with hardware, cleaned of protective film, relieved of sticking or binding, and in working order.
- 4.3.3.1.7** Tops and bottoms of doors sealed.
- 4.3.3.1.8** Floors waxed and polished as specified.
- 4.3.3.1.9** Broken glass replaced and glass cleaned.
- 4.3.3.1.10** Grounds cleared of Contractor's equipment, raked clean of debris, and trash removed from Site.
- 4.3.3.1.11** Work cleaned, free of stains, scratches, and other foreign matter, and damaged and broken material replaced.
- 4.3.3.1.12** Finished and decorative work shall have marks, dirt, and superfluous labels removed.
- 4.3.3.1.13** Final cleanup, as provided herein.

4.4 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.

4.5 Partial Occupancy or Use Prior to Completion

4.5.1 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.

4.5.2 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.

4.5.3 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.

5. FINAL PAYMENT AND RETENTION

5.1 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.

5.2 Prerequisites for Final Payment

The following conditions must be fulfilled prior to Final Payment:

5.2.1 A full release of all Stop Payment Notices served in connection with the Work shall be submitted by Contractor.

5.2.2 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.

5.2.3 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.

5.2.4 A duly completed and executed Document 00 65 19.26, "AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS" from the Contractor.

5.2.5 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.

5.2.6 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.

5.2.7 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.

5.2.8 Architect shall have issued its written approval that final payment can be made.

5.2.9 The Contractor shall have delivered to the District all manuals and materials required by the Contract Documents, which must be approved by the District.

5.2.10 The Contractor shall have completed final clean-up as provided herein.

5.3 Retention

5.3.1 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:

5.3.1.1 After approval by the Architect of the Application and Certificate of Payment,

5.3.1.2 After the satisfaction of the conditions set forth herein, and

5.3.1.3 After forty-five (45) days after the recording of the Notice of Completion by District.

5.3.2 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.

5.4 Substitution of Securities

The District will permit the substitution of securities in accordance with the provisions of Public Contract Code section 22300.

6. 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.

7. NONCONFORMING WORK AND CORRECTION OF WORK

7.1 Nonconforming Work

7.1.1 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.

7.1.2 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.

7.2 Correction of Work

7.2.1 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.

7.2.2 One-Year Warranty Corrections

If, within one (1) year 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 one (1) year 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.

7.3 District's Right to Perform Work

7.3.1 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.

7.3.2 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:

7.3.2.1 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;

7.3.2.2 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

7.3.2.3 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.

8. TERMINATION AND SUSPENSION

8.1 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.

8.2 District's Right to Terminate Contractor for Cause

8.2.1 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:

8.2.1.1 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

8.2.1.2 Contractor fails to complete said Work within the time specified or any extension thereof, or

8.2.1.3 Contractor persistently fails or refuses to perform Work or provide material of sufficient quality as to be in compliance with Contract Documents; or

8.2.1.4 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

8.2.1.5 Contractor fails to make prompt payment to Subcontractors, or for material, or for labor; or

8.2.1.6 Contractor persistently disregards laws, or ordinances, or instructions of District; or

8.2.1.7 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

8.2.1.8 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.

8.2.2 Notification of Termination

8.2.2.1 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.

8.2.2.2 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:

8.2.2.2.1 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

8.2.2.2.2 Commences performance of this Contract within three (3) days from date of serving of its notice to District.

8.2.2.3 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.

8.2.2.4 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.

8.3 Termination of Contractor for Convenience

8.3.1 District in its sole discretion may terminate the Contract in whole or in part upon three (3) days' written notice to the Contractor.

8.3.2 Upon notice, Contractor shall:

8.3.2.1 Cease operations as directed by the District in the notice;

8.3.2.2 Take necessary actions for the protection and preservation of the Work as soon as possible; and

8.3.2.3 Terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

8.3.3 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.

8.3.4 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.

8.4 Effect of Termination

8.4.1 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.

8.4.2 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.

8.4.3 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.

8.4.4 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.

8.4.5 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.

8.4.6 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.

8.4.7 The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to District.

8.5 Emergency Termination of Public Contracts Act of 1949

8.5.1 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.

8.5.1.1 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.

8.5.1.2 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.

8.5.2 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.

8.6 Suspension of Work

8.6.1 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.

8.6.1.1 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:

8.6.1.1.1 That performance is, was or would have been so suspended, delayed or interrupted by another cause for which Contractor is responsible; or

8.6.1.1.2 That an equitable adjustment is made or denied under another provision of the Contract; or

8.6.1.1.3 That the suspension of Work was the direct or indirect result of Contractor's failure to perform any of its obligations hereunder.

8.6.1.2 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.

9. CLAIMS PROCESS

9.1 Obligation to File Claims for Disputed Work

9.1.1 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.

9.1.2 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.

9.2 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.

9.3 Definition of Claim

9.3.1 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:

9.3.1.1 A time extension, including without limitation, for relief of damages or penalties for delay assessed by the District under the Contract;

9.3.1.2 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

9.3.1.3 An amount of payment disputed by the District.

9.4 Claims Presentation

9.4.1 Form and Contents of Claim

9.4.1.1 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.

9.4.1.2 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:

9.4.1.2.1 The issues, events, conditions, circumstances and/or causes giving rise to the dispute, and shall show, in detail, the cause and effect of same;

9.4.1.2.2 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;

9.4.1.2.3 The pertinent dates and/or durations and actual and/or anticipated effects on the Contract Price, Contract Schedule milestones and/or Contract Time adjustments;

9.4.1.2.4 The Time Impact Analysis of all time delays that shows actual time impact on the critical path; and

9.4.1.2.5 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.

9.4.1.3 The Claim shall include the following certification by the Contractor:

9.4.1.3.1 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.

9.4.1.3.2 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.

9.4.2 Contractor shall bear all costs incurred in the preparation and submission of a Claim.

9.4.3 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.

9.5 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:

9.5.1 STEP 1:

9.5.1.1 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.

9.5.1.1.1 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 shall bear interest at seven percent (7%) per annum.

9.5.1.2 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.

9.5.1.3 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.

9.5.2 STEP 2:

9.5.2.1 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.

9.5.2.1.1.1 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 shall bear interest at seven percent (7%) per annum.

9.5.3 STEP 3:

9.5.3.1 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.

9.5.3.1.1 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.

9.5.3.2 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.

9.5.4 STEP 4:

9.5.4.1 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.

9.6 Subcontractor Pass-Through Claims

9.6.1 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.

9.6.2 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.

9.6.3 The Contractor shall bind all its Subcontractors to the provisions of this section and will hold the District harmless against Claims by Subcontractors.

9.7 Government Code Claim Act Claim

9.7.1 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.

9.7.2 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.

9.7.3 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.

9.8 Claim Resolution pursuant to Public Contract Code section 20104 et seq.

9.8.1 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.

9.8.1.1 Contractor shall file with the District any written Claim, including the documents necessary to substantiate it, upon the application for final payment.

9.8.1.2 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.

9.8.1.2.1 If additional information is required, it shall be requested and provided by mutual agreement of the parties.

9.8.1.2.2 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.

9.8.1.3 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.

9.8.1.3.1 If additional information is required, it shall be requested and provided upon mutual agreement of the District and the Contractor.

9.8.1.3.2 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.

9.8.1.4 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.

9.8.1.5 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.

9.8.1.6 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.

9.8.1.7 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.

9.8.1.8 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.

9.8.2 Contractor shall bind its Subcontractors to the provisions of this Section and will hold the District harmless against disputes by Subcontractors.

9.9 Claim Procedure Compliance

9.9.1 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.

9.9.2 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.

9.10 Claim Resolution Non-Applicability

9.10.1 The procedures for dispute and claim resolutions set forth in this Article shall not apply to the following:

- 9.10.1.1** Personal injury, wrongful death or property damage claims;
- 9.10.1.2** Latent defect or breach of warranty or guarantee to repair;
- 9.10.1.3** Stop payment notices;
- 9.10.1.4** District's rights set forth in the Article on Suspension and Termination;
- 9.10.1.5** Disputes arising out of labor compliance enforcement by the Department of Industrial Relations; or
- 9.10.1.6** 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.

9.11 Attorney's Fees

9.11.1 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.

10. STATE LABOR, WAGE & HOUR, APPRENTICE, AND RELATED PROVISIONS

10.1 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.

10.2 Wage Rates, Travel, and Subsistence

10.2.1 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.

10.2.2 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.

10.2.3 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.

10.2.4 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.

10.2.5 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.

10.2.6 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.

10.2.7 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.

10.2.8 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).

10.3 Hours of Work

10.3.1 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.

10.3.2 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.

10.3.3 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.

10.3.4 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.

10.4 Payroll Records

10.4.1 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.

10.4.1.1 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:

10.4.1.1.1 Contractor and/or its Subcontractor(s) provide CPRs acceptable to the DIR; and

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

10.4.2 All CPRs shall be available for inspection at all reasonable hours at the principal office of Contractor on the following basis:

10.4.2.1 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.

10.4.2.2 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.

10.4.2.3 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.

10.4.3 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.

10.4.4 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.

10.4.5 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.

10.5 [RESERVED]

10.6 Apprentices

10.6.1 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.

10.6.2 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.

10.6.3 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.

10.6.4 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.

10.6.5 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.

10.6.6 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.

10.6.7 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:

10.6.7.1 Be denied the right to bid on any subsequent project for one (1) year from the date of such determination;

10.6.7.2 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.

10.6.8 Contractor and all Subcontractors shall comply with Labor Code section 1777.6, which section forbids certain discriminatory practices in the employment of apprentices.

10.6.9 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.

10.7 Non-Discrimination

10.7.1 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.

10.7.2 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.

10.8 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.).

11. MISCELLANEOUS

11.1 Assignment of Antitrust Actions

11.1.1 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.

11.1.2 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.

11.1.3 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.

11.1.4 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.

11.1.5 Under this Article, "public purchasing body" is District and "bidder" is Contractor.

11.2 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.

11.3 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.

11.4 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.

11.5 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 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

2.1 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.

2.2 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.

2.3 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.

2.4 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.

3. Permits, Certificates, Licenses, Fees, Approvals

3.1 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:

None.

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.

4. As-Builts and Record Drawings

4.1 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 in the following format .DWG for CADD & RVT for BIM, plus one set of As-Built Drawings on high quality paper.

4.2 Contractor shall submit Record Drawings pursuant to the Contract Documents consisting of one set of computer-aided design and drafting ("CADD") files in the following format .DWG for CADD & RVT for BIM, plus one set of Record Drawings on high quality paper.

5. Disabled Veteran Business Enterprises

This Project uses or may plan to use funds allocated pursuant to the State of California School Facility Program ("Program") for the construction and/or modernization of school buildings. Therefore, Section 17076.11 of the Education Code requires the District to have a participation goal for disabled veteran business enterprises ("DVBE") of at least three percent (3%), per year, of the overall dollar amount expended each year by the District on projects that receive state funding. The Contractor must submit the Disabled Veteran Business Enterprise Participation Certification to the District with its executed Agreement, identifying the steps Contractor took to solicit DVBE participation in conjunction with this Contract.

6. Construction Manager

The District will use a Construction Manager on the Project that is the subject of this Contract. Van Pelt Construction Management is the Construction Manager for this Project.

7. Program Manager

Van Pelt Construction Management is the Program Manager designated for the Project that is the subject of this Contract.

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 all the 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

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

- A. The Work of this Contract consists of the following:

Four Restroom renovations; Plumbing; Electrical; AC Paving; Concrete Curbs; Artificial Turf; Chain Link Fencing; Grading, in preparation for Owner installed play structures and equipment; Exterior Painting.

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 by others concurrent with the Work of this Contract:
 - (1) Contractor under separate contract may perform work concurrently in classrooms.

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 **[\$100,000]** as an allowance for Unforeseen Conditions within the limits set forth in the Contract Documents. This Allowance 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

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.

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.**

**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): \$_____

SAN RAFAEL CITY SCHOOLS

**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. Contractor 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.

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 to Proceed 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:

ACTIVITY DESCRIPTION

REQUIRED COMPLETION

CONSTRUCTION STARTS

April 15, 2024

FINAL PROJECT COMPLETION

July 14, 2024

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 ($\frac{3}{4}$) 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 **[i.e., District Project Planner for Windows, latest version]**. 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, catalogs, 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. Contractor 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

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.turfgrasssod.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 reinspections, 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 103-22 Listing of Structural Tests and Special Inspections, 2022 CBC (attached to this section)

PART 3 -EXECUTION Not Used.

END OF DOCUMENT

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS, 2022 CBC

General

Application Number: 01-121552	School Name: Short Elementary School	School District: San Rafael City Schools
DSA File Number: 21-39	Increment Number:	Date Created: 2024-02-15 16:22:26

IMPORTANT: This form is only a summary list of structural tests and some of the special inspections required for the project. Generally, the structural tests and special inspections noted on this form are those that will be performed by the Geotechnical Engineer of Record, Laboratory of Record, or Special Inspector. The actual complete test and inspection program must be performed as detailed on the DSA approved documents. The appendix at the bottom of this form identifies work NOT subject to DSA requirements for special inspection or structural testing. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc., per Title 24, Part 2, Chapter 17A (2022 CBC).

****NOTE:** Undefined section and table references found in this document are from the CBC, or California Building Code.

KEY TO COLUMNS

1. TYPE	2. PERFORMED BY
Continuous – Indicates that a continuous special inspection is required	GE (Geotechnical Engineer) – Indicates that the special inspection shall be performed by a registered geotechnical engineer or his or her authorized representative.
Periodic – Indicates that a periodic special inspection is required	LOR (Laboratory of Record) – Indicates that the test or special inspection shall be performed by a testing laboratory accepted in the DSA Laboratory Evaluation and Acceptance (LEA) Program. See CAC Section 4-335.
Test – Indicates that a test is required	PI (Project Inspector) – Indicates that the special inspection may be performed by a project inspector when specifically approved by DSA.
	SI (Special Inspection) – Indicates that the special inspection shall be performed by an appropriately qualified/approved special inspector.

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Table 1705A.6, Table 1705A.7, Table 1705A.8

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Geotechnical Reports: Project does NOT have and does NOT require a geotechnical report

S1. GENERAL:				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Verify that: <ul style="list-style-type: none">• Site has been prepared properly prior to placement of controlled fill and/or excavations for foundations.• Foundation excavations are extended to proper depth and have reached proper material.• Materials below footings must not contain loose material, mud, organic silt, organic clays, or peat.	See Notes	PI	Refer to specific items identified in the Appendix listing exemptions for limitations. Placement of controlled fill exceeding 12" depth under foundations and/or within the building envelope is not permitted without a geotechnical report.

S2. SOIL COMPACTION AND FILL:				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Perform classification and testing of fill materials.	Test	LOR*	* Under the supervision of the geotechnical engineer.
<input checked="" type="checkbox"/>	b. Verify use of proper materials, densities and inspect lift thicknesses, placement and compaction during placement of fill.	Continuous	LOR*	* Under the supervision of a geotechnical engineer or LOR's engineering manager. Refer to specific items identified in the Appendix listing exemptions for limitations.
<input checked="" type="checkbox"/>	c. Compaction testing.	Test	LOR*	* Under the supervision of a geotechnical engineer or LOR's engineering manager. Refer to specific items identified in the Appendix listing exemptions for limitations.

S3. DRIVEN DEEP FOUNDATIONS (PILES):				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Verify pile materials, sizes and lengths comply with the requirements.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.

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Table 1705A.6, Table 1705A.7, Table 1705A.8

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	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	b. Determine capacities of test piles and conduct additional load tests as required.	Test	LOR*	* Under the supervision of the geotechnical engineer.
<input type="checkbox"/>	c. Inspect driving operations and maintain complete and accurate records for each pile.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
<input type="checkbox"/>	d. Verify locations of piles and their plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and record any pile damage.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
<input type="checkbox"/>	e. Steel piles.	Provide tests and inspections per STEEL section below.		
<input type="checkbox"/>	f. Concrete piles and concrete filled piles.	Provide tests and inspections per CONCRETE section below.		
<input type="checkbox"/>	g. For specialty piles, perform additional inspections as determined by the registered design professional in responsible charge.	*	*	* As defined on drawings or specifications.

	S4. CAST-IN-PLACE DEEP FOUNDATIONS (PIERS):			
	Test or Special Inspection	Type	Performed By	Code References and Note
<input checked="" type="checkbox"/>	a. Inspect drilling operations and maintain complete and accurate records for each pier.	Continuous	PI	Continuous inspection to be provided by project inspector. Refer to specific items identified in the Appendix listing exemptions for limitations.
<input checked="" type="checkbox"/>	b. Verify pier locations, diameters, plumbness and lengths. Record concrete or grout volumes.	Continuous	PI	Continuous inspection to be provided by project inspector. Refer to specific items identified in the Appendix listing exemptions for limitations.
<input checked="" type="checkbox"/>	c. Concrete piers.	Provide tests and inspections per CONCRETE section below.		

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	Test or Special Inspection	Type	Performed By	Code References and Notes
	S5. RETAINING WALLS:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Placement, compaction and inspection of backfill.	Continuous	GE*	1705A.6.1. * By geotechnical engineer or his or her qualified representative. (See section S2 above).
<input type="checkbox"/>	b. Placement of soil reinforcement and/or drainage devices.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
<input type="checkbox"/>	c. Segmental retaining walls; inspect placement of units, dowels, connectors, etc.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative. See DSA IR 18-2.
<input type="checkbox"/>	d. Concrete retaining walls.	Provide tests and inspections per CONCRETE section below.		
<input type="checkbox"/>	e. Masonry retaining walls.	Provide tests and inspections per MASONRY section below.		

	S6. OTHER SOILS:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Soil Improvements	Test	GE*	Submit a comprehensive report documenting final soil improvements constructed, construction observation and the results of the confirmation testing and analysis to CGS (California Geological Survey) for final acceptance. * By geotechnical engineer or his or her qualified representative.
<input type="checkbox"/>	b. Inspection of Soil Improvements	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
<input type="checkbox"/>	c.			

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Table 1705A.3; ACI 318-19 Sections 26.12 & 26.13

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C1. CAST-IN-PLACE CONCRETE				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Verify use of required design mix.	Continuous	SI	Table 1705A.3 Item 5, 1910A.1.
<input checked="" type="checkbox"/>	b. Identify, sample, and test reinforcing steel.	Test	LOR	1910A.2; ACI 318-19 Ch.20 and Section 26.6.1.2; DSA IR 17-10. (See Appendix (end of this form) for exemptions.)
<input checked="" type="checkbox"/>	c. During concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	Test	LOR	Table 1705A.3 Item 6; ACI 318-19 Sections 26.5 & 26.12.
<input checked="" type="checkbox"/>	d. Test concrete (f'c).	Test	LOR	1905A.1.17; ACI 318-19 Section 26.12.
<input type="checkbox"/>	e. Batch plant inspection:	See Notes	SI	Default of 'Continuous' per 1705A.3.3. If approved by DSA, batch plant inspection may be reduced to 'Periodic' subject to requirements in Section 1705A.3.3.1, or not required per 1705A.3.3.2. See IR 17-13. (See Appendix (end of this form) for exemptions.)
<input type="checkbox"/>	f. Welding of reinforcing steel.	Provide special inspection per STEEL, Category S/A4(d) & (e) and/or S/A5(g) & (h) below.		

C2. PRESTRESSED / POST-TENSIONED CONCRETE (IN ADDITION TO SECTION C1):				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Sample and test prestressing tendons and anchorages.	Test	LOR	1705A.3.4, 1910A.3
<input type="checkbox"/>	b. Inspect placement of prestressing tendons.	Periodic	SI	1705A.3.4, Table 1705A.3 Items 1 & 9.

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Table 1705A.3; ACI 318-19 Sections 26.12 & 26.13

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	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	c. Verify in-situ concrete strength prior to stressing of post-tensioning tendons.	Periodic	SI	Table 1705A.3 Item 13. Special inspector to verify specified concrete strength test prior to stressing.
<input type="checkbox"/>	d. Inspect application of post-tensioning or prestressing forces and grouting of bonded prestressing tendons.	Continuous	SI	1705A.3.4, Table 1705A.3 Item 9; ACI 318-19 Section 26.13

	C3. PRECAST CONCRETE (IN ADDITION TO SECTION C1):			
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Inspect fabrication of precast concrete members.	Continuous	SI	ACI 318-19 Section 26.13, and PCI MNL-128 and -130.
<input type="checkbox"/>	b. Inspect erection of precast concrete members.	Periodic	SI*	Table 1705A.3 Item 10. * May be performed by PI when specifically approved by DSA.
<input type="checkbox"/>	c. For precast concrete diaphragm connections or reinforcement at joints classified as moderate or high deformability elements (MDE or HDE) in structures assigned to Seismic Design Category D, E or F, inspect such connections and reinforcement in the field for: 1. Installation of the embedded parts 2. Completion of the continuity of reinforcement across joints. 3. Completion of connections in the field.	Continuous	SI	Table 1705A.3; ACI 318-19 Section 26.13.1.3; ACI 550.5
<input type="checkbox"/>	d. Inspect installation tolerances of precast concrete diaphragm connections for compliance with ACI 550.5.	Periodic	SI	Table 1705A.3; ACI 318-19 Section 26.13.1.3; ACI 550.5

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Table 1705A.3; ACI 318-19 Sections 26.12 & 26.13

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C4. SHOTCRETE (IN ADDITION TO SECTION C1):				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Inspect shotcrete placement for proper application techniques.	Continuous	SI	1705A.3.9, Table 1705A.3 Item 7, 1908A.1, 1908A.2, 1908A.3. See ACI 506.2-13 Section 3.4, ACI 506R-16.
<input type="checkbox"/>	b. Sample and test shotcrete (f'_c).	Test	LOR	1908A.2, 1705A.3.9

C5. POST-INSTALLED ANCHORS:				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Inspect installation of post-installed anchors	See Notes	SI*	1617A.1.19, Table 1705A.3 Item 4a (Continuous) & 4b (Periodic), 1705A.3.8 (See Appendix (end of this form) for exemptions). ACI 318-19 Section 26.13. * May be performed by the project inspector when specifically approved by DSA.
<input type="checkbox"/>	b. Test post-installed anchors.	Test	LOR	1910A.5. (See Appendix (end of this form) for exemptions.)

C6. OTHER CONCRETE:				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a.			

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1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

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S/A1. STRUCTURAL STEEL, COLD-FORMED STEEL AND ALUMINUM USED FOR STRUCTURAL PURPOSES				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Verify identification of all materials and: • Mill certificates indicate material properties that comply with requirements. • Material sizes, types and grades comply with requirements.	Periodic	*	Table 1705A.2.1 Item 3a 3c. 2202A.1; AISI S100-20 Section A3.1 & A3.2, AISI S240-20 Section A3 & A5, AISI S220-20 Sections A4 & A6. * By special inspector or qualified technician when performed off-site.
<input checked="" type="checkbox"/>	b. Test unidentified materials	Test	LOR	2202A.1.
<input checked="" type="checkbox"/>	c. Examine seam welds of HSS shapes	Periodic	SI	DSA IR 17-3.
<input checked="" type="checkbox"/>	d. Verify and document steel fabrication per DSA-approved construction documents.	Periodic	SI	Not applicable to cold-formed steel light-frame construction, except for trusses (1705A.2.4).
<input type="checkbox"/>	e. Buckling restrained braces.	Test	LOR	Testing and special inspections in accordance with IR 22-4.

S/A2. HIGH-STRENGTH BOLTS:				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Verify identification markings and manufacturer's certificates of compliance conform to ASTM standards specified in the DSA-approved documents.	Periodic	SI	Table 1705A.2.1 Items 1a & 1b, 2202A.1; AISC 360-16 Section A3.3, J3.1, and N3.2; RCSC 2014 Section 1.5 & 2.1; DSA IR 17-8 & DSA IR 17-9.
<input checked="" type="checkbox"/>	b. Test high-strength bolts, nuts and washers.	Test	LOR	Table 1705A.2.1 Item 1c, 2213A.1; RCSC 2014 Section 7.2; DSA IR 17-8.
<input checked="" type="checkbox"/>	c. Bearing-type ("snug tight") connections.	Periodic	SI	Table 1705A.2.1 Item 2a, 1705A.2.6, 2204A.2; AISC 360-16 J3.1, J3.2, M2.5 & N5.6; RCSC 2014 Section 9.1; DSA IR 17-9.
<input checked="" type="checkbox"/>	d. Pretensioned and slip-critical connections.	*	SI	Table 1705A.2.1 Items 2b & 2c, 1705A.2.6, 2204A.2; AISC 360-16 J3.1, J3.2, M2.5 & N5.6; RCSC 2014 Sections 9.2 & 9.3; DSA IR 17-9. **"Continuous" or "Periodic" depends on the tightening method used.

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1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

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S/A3. WELDING:				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Verify weld filler material identification markings per AWS designation listed on the DSA-approved documents and the WPS.	Periodic	SI	1705A.2.5, Table 1705A.2.1 Items 4 & 5; AWS D1.1 and AWS D1.8 for structural steel; AWS D1.2 for Aluminum; AWS D1.3 for cold-formed steel; AWS D1.4 for reinforcing steel; DSA IR 17-3.
<input checked="" type="checkbox"/>	b. Verify weld filler material manufacturer's certificate of compliance.	Periodic	SI	DSA IR 17-3.
<input checked="" type="checkbox"/>	c. Verify WPS, welder qualifications and equipment.	Periodic	SI	DSA IR 17-3.

S/A4. SHOP WELDING (IN ADDITION TO SECTION S/A3):				
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input checked="" type="checkbox"/>	a. Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds.	Continuous	SI	Table 1705A.2.1 Items 5a.1 4; AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
<input checked="" type="checkbox"/>	b. Inspect single-pass fillet welds ≤ 5/16", floor and roof deck welds.	Periodic	SI	1705A.2.2, Table 1705A.2.1 Items 5a.5 & 5a.6; AISC 360-16 (and AISC 341-16 as applicable); DSA IR 17-3.
<input checked="" type="checkbox"/>	c. Inspect welding of stairs and railing systems.	Periodic	SI	1705A.2.1; AISC 360-16 (and AISC 341-16 as applicable); AWS D1.1 & D1.3; DSA IR 17-3.
<input type="checkbox"/>	d. Verification of reinforcing steel weldability other than ASTM A706.	Periodic	SI	1705A.3.1; AWS D1.4; DSA IR 17-3. Verify carbon equivalent reported on mill certificates.
<input type="checkbox"/>	e. Inspect welding of reinforcing steel.	Continuous	SI	Table 1705A.2.1 Item 5b, 1705A.3.1, Table 1705A.3 Item 2, 1903A.8; AWS D1.4; DSA IR 17-3.

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1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

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	Test or Special Inspection	Type	Performed By	Code References and Notes
	S/A5. FIELD WELDING (IN ADDITION TO SECTION S/A3):			
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Inspect groove welds, multi-pass fillet welds, single pass fillet welds > 5/16", plug and slot welds.	Continuous	SI	Table 1705A.2.1 Items 5a.1 4; AISC 360-16 (AISC 341-16 as applicable); DSA IR 17-3.
<input type="checkbox"/>	b. Inspect single-pass fillet welds ≤ 5/16".	Periodic	SI	Table 1705A.2.1 Item 5a.5; AISC 360-16 (AISC 341-16 as applicable); DSA IR 17-3.
<input type="checkbox"/>	c. Inspect end-welded studs (ASTM A-108) installation (including bend test).	Periodic	SI	2213A.2; AISC 360-16 (AISC 341-16 as applicable); AWS D1.1; DSA IR 17-3.
<input type="checkbox"/>	d. Inspect floor and roof deck welds.	Periodic	SI	1705A.2.2, Table 1705A.2.1 Item 5a.6; AISC 360-16 (AISC 341-16 as applicable); AWS D1.3; DSA IR 17-3.
<input type="checkbox"/>	e. Inspect welding of structural cold-formed steel.	Periodic	SI*	1705A.2.5; AWS D1.3; DSA IR 17-3. The quality control provisions of AISI S240-20 Chapter D shall also apply. * May be performed by the project inspector when specifically approved by DSA.
<input type="checkbox"/>	f. Inspect welding of stairs and railing systems.	Periodic	SI*	1705A.2.1; AISC 360-16 (AISC 341-16 as applicable); AWS D1.1 & D1.3; DSA IR 17-3. * May be performed by the project inspector when specifically approved by DSA.
<input type="checkbox"/>	g. Verification of reinforcing steel weldability.	Periodic	SI	1705A.3.1; AWS D1.4; DSA IR 17-3. Verify carbon equivalent reported on mill certificates.
<input type="checkbox"/>	h. Inspect welding of reinforcing steel.	Continuous	SI	Table 1705A.2.1 Item 5b, 1705A.3.1, Table 1705A.3 Item 2, 1903A.8; AWS D1.4; DSA IR 17-3.

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1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

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	Test or Special Inspection	Type	Performed By	Code References and Notes
	S/A6. NONDESTRUCTIVE TESTING:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Ultrasonic	Test	LOR	1705A.2.1, 1705A.2.5; AISC 341-16 J6.2, AISC 360-16 N5.5; AWS D1.1, AWS D1.8; DSA IR 17-2.
<input type="checkbox"/>	b. Magnetic Particle	Test	LOR	1705A.2.1, 1705A.2.5; AISC 341-16 J6.2, AISC 360-16 N5.5; AWS D1.1, AWS D1.8; DSA IR 17-2.
<input type="checkbox"/>	c.	Test	LOR	

	S/A7. STEEL JOISTS AND TRUSSES:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Verify size, type and grade for all chord and web members as well as connectors and weld filler material; verify joist profile, dimensions and camber (if applicable); verify all weld locations, lengths and profiles; mark or tag each joist.	Continuous	SI	1705A.2.3, Table 1705A.2.3; AWS D1.1; DSA IR 22-3 for steel joists only. 1705A.2.4; AWS D1.3 for cold-formed steel trusses.

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1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

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	Test or Special Inspection	Type	Performed By	Code References and Notes
	S/A8. SPRAYED FIRE-RESISTANT MATERIALS:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Examine structural steel surface conditions, inspect application, take samples, measure thickness and verify compliance of all aspects of application with DSA-approved documents.	Periodic	SI	1705A.15, 1705A.15.1, 1705A.15.2, 1705A.15.3, 1705A.15.4, 1705A.15.5, 1705A.15.6.
<input type="checkbox"/>	b. Test density.	Test	LOR	1705A.15.1, 1705A.15.5, ASTM E605
<input type="checkbox"/>	c. Bond strength adhesion/cohesion.	Test	LOR	1705A.15.1, 1705A.15.6, ASTM E736

	S/A9. ANCHOR BOLTS AND ANCHOR RODS:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Anchor Bolts and Anchor Rods	Test	LOR	Identify, sample and test anchor bolts and anchor rods not meeting exemptions identified in Section 1 of IR 17-11.
<input type="checkbox"/>	b. Threaded rod not used for foundation anchorage.	Test	LOR	Identify, sample and test threaded rods not meeting exemptions identified in Section 1 of IR 17-11.

	S/A10. STORAGE RACK SYSTEMS:			
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a. Materials used, to verify compliance with one or more of the material test reports in accordance with the approved construction documents.	Periodic	SI	Table 1705A.13.7
<input type="checkbox"/>	b. Fabricated storage rack elements.	Periodic	SI	1704A.2.5; Table 1705A.13.7

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1705A.2.1, Table 1705A.2.1; AISC 303-16, AISC 341-16, AISC 358-16, AISC 360-16; AISI S100-20; RCSC 2014; AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.8

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	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	c. Storage rack anchorage installation.	Periodic	SI	ANSI/MH16.1 Section 7.3.2; Table 1705A.13.7
<input type="checkbox"/>	d. Completed storage rack system to indicate compliance with the approved construction documents.	Periodic	SI*	Table 1705A.13.7; * May be preformed by the project inspector when specifically approved by DSA.

	S/A11. Other Steel			
	Test or Special Inspection	Type	Performed By	Code References and Notes
<input type="checkbox"/>	a.			

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

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Exempt items given in DSA IR A-22 or the 2022 CBC (including DSA amendments) and those items identified below with a check mark by the design professional are NOT subject to DSA requirements for the structural tests / special inspections noted. **Items marked as exempt shall be identified on the approved construction documents.** The project inspector shall verify all construction complies with the approved construction documents.

	SOILS:
<input type="checkbox"/>	1. Deep foundations acting as a cantilever footing with a design based on minimum allowable pressures per CBC Table 1806A.2 and without a geotechnical report for the following cases: A) free standing sign or scoreboard, B) cell or antenna towers and poles less than 35'-0" tall (e.g., lighting poles, flag poles, poles supporting open mesh fences, etc.), C) single-story structure with dead load less than 5 psf (e.g., open fabric shade structure), or D) covered walkway structure with an apex height less than 10'-0" above adjacent grade.
<input type="checkbox"/>	2. Shallow foundations, etc. are exempt from special inspections and testing by a Geotechnical Engineer for the following cases: A) buildings without a geotechnical report and meeting the exception item #1 criteria in CBC Section 1803A.2 supported by native soil (any excavation depth) or fill soil (not exceeding 12" depth per CBC Section 1804A.6), B) soil scarification/recompaction not exceeding 12" depth, C) native or fill soil supporting exterior non-structural flatwork (e.g., sidewalks, site concrete ramps, site stairs, parking lots, driveways, etc.), D) unpaved landscaping and playground areas, or E) utility trench backfill with depth not exceeding 12".

	CONCRETE/MASONRY:
<input type="checkbox"/>	1. Post-installed anchors for the following: A) exempt non-structural components (e.g., mechanical, electrical, plumbing equipment - see item 7 for "Welding" in the Appendix below) given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) or B) interior nonstructural wall partitions meeting criteria listed in exempt item 3 for "Welding" in the Appendix below
<input type="checkbox"/>	2. Concrete batch plant inspection is not required for items given in CBC Section 1705A.3.3.2 subject to the requirements and limitations in that section.
<input type="checkbox"/>	3. Non-bearing non-shear masonry walls may be exempt from certain DSA masonry testing and special inspection items as allowed per DSA IR 21-1. Refer to construction documents for specific exemptions accordingly for each applicable wall condition shown in Appendix A of IR 21-1.
<input type="checkbox"/>	4. Epoxy shear dowels in site flatwork and/or other non-structural concrete.

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number: 01-121552	School Name: Short Elementary School	School District: San Rafael City Schools
DSA File Number: 21-39	Increment Number:	Date Created: 2024-02-15 16:22:26

	CONCRETE/MASONRY:
<input type="checkbox"/>	5. Testing of reinforcing bars is not required for items given in CBC Section 1910A.2 subject to the requirements and limitations in that section.

	WELDING:
<input type="checkbox"/>	1. Solid-clad and open-mesh fences, gates with maximum leaf span of 10', and gates with a maximum rolling section of 10' all having an apex height less than 8'-0" above lowest adjacent grade. When located above circulation or occupied space below, these gates/fences are not located within 1.5x gate/fence height (max 8'-0") to the edge of floor or roof.
<input type="checkbox"/>	2. Handrails, guardrails, and modular or relocatable ramps associated with walking surfaces less than 30" above adjacent grade (excluding post base connections per the 'Exception' language in Section 1705A.2.1); fillet welds shall not be ground flush.
<input type="checkbox"/>	3. Non-structural interior cold-formed steel framing spanning less than 15'-0", such as in interior partitions, interior soffits, etc. supporting only self weight and light-weight finishes or adhered tile, masonry, stone, or terra cotta veneer no more than 5/8" thickness and apex less than 20'-0" in height and not over an exit way. Maximum tributary load to a member shall not exceed the equivalent of that occurring from a 10'x10' opening in a 15' tall wall for a header or king stud.
<input type="checkbox"/>	4. Manufactured support frames and curbs using hot rolled or cold-formed steel (i.e., light gauge) for mechanical, electrical, or plumbing equipment weighing less than 2000# (equipment only) (connections of such frames to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections S/A3, S/A4 and/or S/A5 of listing above).
<input type="checkbox"/>	5. Manufactured components (e.g., Tolco, B-Line, Afcon, etc.) for mechanical, electrical, or plumbing hanger support and bracing (connections of such components to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections S/A3, S/A4 and/or S/A5 of listing above).
<input type="checkbox"/>	6. TV Brackets, projector mounts with a valid listing (see DSA IR A-5) and recreational equipment (e.g., playground structures, basketball backstops, etc.) (connections of such elements to superstructure elements using welding will require special inspection as noted in selected item(s) for sections S/A3, S/A4 and/or S/A5 located in the Steel/Aluminum category of listing above).

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number: 01-121552	School Name: Short Elementary School	School District: San Rafael City Schools
DSA File Number: 21-39	Increment Number:	Date Created: 2024-02-15 16:22:26

	WELDING:
<input type="checkbox"/>	7. Any support for exempt non-structural components given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) meeting the following: A) when supported on a floor/roof, <400# and resulting composite center of mass (including component's center of mass) ≤4' above supporting floor/roof, B) when hung from a wall or roof/floor, <20# for discrete units or <5 plf for distributed systems.

DSA 103-22: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS(SIGNATURE), 2022 CBC

Application Number:

01-121552

School Name:

Short Elementary School

School District:

San Rafael City Schools

DSA File Number:

21-39

Increment Number:

Date Created:

2024-02-15 16:22:26

Name of Architect or Engineer in general responsible charge:

Trent Sommers

Name of Structural Engineer (When structural design has been delegated):

Signature of Architect or Structural Engineer:



Date:

02/08/2024

Note: To facilitate DSA electronic mark-ups and identification stamp application, DSA recommends against using secured electronic or digital signatures.

DSA STAMP

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-121552 INC:
REVIEWED FOR
SS ☒ FLS ☐ ACS ☐
DATE: 2/21/2024

DSA 103-22: LIST OF REQUIRED VERIFIED REPORTS, CBC 2022

Application Number: 01-121552	School Name: Short Elementary School	School District: San Rafael City Schools
DSA File Number: 21-39	Increment Number:	Date Created: 2024-02-15 16:22:26

1. Structural Testing and Inspection: Laboratory Verified Report Form DSA 291

2. Shop Welding Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292

3. High-Strength Bolt Installation Inspection: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292

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 timely 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 may use an area in with the school for an office area, if approved in writing by District.
- (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:

- (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

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. Hazardous Materials Procedures and Requirements;
- D. Hazardous Materials Certification;
- E. Lead-Based Paint Certification;
- F. 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 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.
- 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 (mylars).
- 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 vellums of the Project Record Drawings ("As-Built") showing all changes incorporated into the Work since the preceding monthly submittal. The As-Built shall be available at the Project Site. The Contractor shall submit reproducible vellums at the conclusion of the Project following review of the blue line 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

PROJECT MANUAL

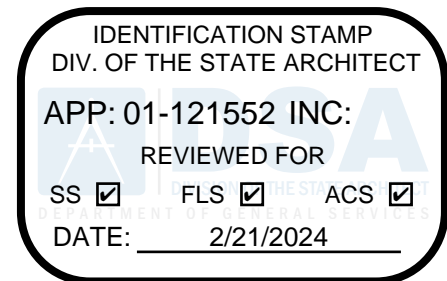
Short Elementary School ECE Development Center

35 Marin St, San Rafael, CA 94901

San Rafael City Elementary School District

310 Nova Albino way

San Rafael, CA 94903



1100 Lincoln Ave, Suite 106

Napa, CA 94558

Phone: (530) 781-3112

Project No: 2023-014.00

02/09/24

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NOT USED

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DIVISION 10	SPECIALTIES
10 14 00	SIGNAGE
10 28 00	TOILET AND RESTROOM ACCESSORIES
DIVISION 11	EQUIPMENT
11 68 16	PLAY STRUCTURE
DIVISION 12	FURNISHINGS
	NOT USED
DIVISIONS 13-15	
	NOT USED
DIVISIONS 21	FIRE SUPPRESSION
	NOT USED
DIVISION 22	PLUMBING
22 00 00	PLUMBING GENERAL CONDITIONS
22 11 00	FACILITIES WATER DISTRIBUTION
22 13 00	FACILITIES WATER DISTRIBUTION
22 42 00	PLUMBING FIXTURES AND TRIM
DIVISION 23	HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)
	NOT USED
DIVISION 25	INTEGRATED AUTOMATION
	NOT USED

DIVISION 26	ELECTRICAL
	NOT USED
DIVISION 27	COMMUNICATIONS
	NOT USED
DIVISION 28	LOW VOLTAGE
	NOT USED
DIVISION 31	SITE WORK
31 10 00	CLEARING AND GRUBBING
31 20 00	EARTHWORK GENERAL PROVISIONS
31 30 00	SITE PREPARATION
31 40 00	EXCAVATION
31 60 00	TRENCHING, BACKFILL, AND COMPACTION
DIVISION 32	EXTERIOR IMPROVEMENTS
32 10 00	CONCRETE WORK
32 13 13	CHAIN LINK FENCE AND GATES
32 13 13.1	CONCRETE WORK (LANDSCAPE)
32 14 00	UNIT PAVERS
32 17 23.13	PAINTED PAVEMENT MARKINGS
32 18 16	SYNTHETIC RESILLIENT SURFACING
32 18 16.16	PROTECTIVE RUBBER SURFACING UNDER SYNTHETIC TURF
32 20 00	PAVEMENT MARKING AND MARKERS
32 30 00	HOT MIX ASPHALT
32 40 00	CURB GUTTER AND SIDEWALKS
32 84 00	PLANTING IRRIGATION
32 92 00	TURF PLANTING
DIVISION 33	UTILITIES
33 20 00	STORM DRAINAGE
33 50 00	CLEAN DRAIN ROCK

SECTION 01 56 39
TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Furnish all labor, materials, equipment, facilities, transportation and services to complete tree protection and related work as shown on the drawings and/or specified herein.
- B. Description of Work:
 - 1. Protection of existing trees and vegetation to remain.
 - 2. Trimming of existing trees.
 - 3. Maintenance of existing trees during construction.
 - 4. Removal and re-installation of existing trees.
 - 5. Contractor shall retain the services of a certified arborist to perform routine visits and oversee the protection of the existing trees within the project area during demolition, construction and maintenance and to especially review and recommend treatment when roots are encountered and to perform routine maintenance during the construction phase.
- C. Traffic:
 - 1. Do not interfere with or close public ways without permission of the Owner's Representative.
 - 2. Do not interfere with adjacent private properties without permission of the Owner's Representative.
- D. Site Utilities:
 - 1. Advise utility companies of excavation activities before starting excavations.
 - 2. Locate and identify underground utilities passing through work area before starting work.
 - 3. In event unidentified underground utilities are encountered during work, advise utility owner immediately before proceeding. Add any new utility information to project record drawings for actual location.
 - 4. Protect all existing-to-remain utilities.
 - 5. Do not interrupt existing utilities without advance notice to and approval from the Owner's Representative.

1.3 SUBMITTALS

- A. Qualification Data: For qualified tree service firm.
- B. Existing Conditions: Submit documentation of existing trees and plantings indicated to remain and/or relocate, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.
 - 1. Use sufficiently detailed photographs.
 - 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.
- C. Certification: From arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.
- D. Written Maintenance Recommendations: From certified arborist, for care and protection of trees affected by construction during and after completing the Work and for removal and re-installation of existing trees.

1.4 QUALITY ASSURANCE

- A. Arborist Qualifications: Certified Arborist as certified by the International Society of Arboriculture (ISA) and having performed similar services for a minimum of five (5) years.
- B. Certified Arborist Written Recommendations: Contractor shall retain the services of a reputable Arborist certified by the International Society of Arboriculture (ISA) for review and prepare written recommendations for existing to remain shrubs and trees within the project area under the following circumstances. Contractor shall submit the written recommendations to the Owner's Representative for review. Contractor shall implement Arborist recommendations.
 - 1. Grading, excavation, trenching or any other similar work is required that may disturb roots of existing to remain trees over six (6) inches in diameter measured three (3) feet above finish grade.
 - 2. Pruning is required on branches more than two (2) inches in diameter for existing to remain trees over six (6) inches in diameter measured three (3) feet above finish grade.
 - 3. Damage to existing to remain tree(s) has occurred during construction to any part of the tree.
 - 4. Construction is required within ten (10) horizontal feet of a tree and/or shrub to remain, with a trunk diameter over six (6) inches in diameter measured three (3) feet above finish grade.

- C. Certified Arborist Over-sight: Certified Arborist shall perform site inspections, provide over-sight and written summary of visit to Owner's Representative prior to demolition and construction work within the dripline of existing to remain trees with a trunk diameter over six (6) inches in diameter measured three (3) feet above finish grade and provide routine maintenance as required to maintain healthy, viable trees throughout the construction process. Certified Arborist shall provide over-site for recommended pruning for branches two (2) inches and larger in size for existing to remain trees.
- D. Contractor shall be liable for the loss in value due to damaged trees and for repair costs resulting as determined by the Client. Due to the irreplaceable nature of many existing trees and vegetation, the liability to the General Contractor shall be set at \$1,500.00 minimum per tree. The Trunk Formula method for Northern California established by the International Society of Arboriculture will be used to compute the actual value. Other vegetation lost due to construction activity and/or neglect shall be replaced by General Contractor in kind with similar size, potted plant stock to match existing prior to construction.

1.5 PROJECT CONDITIONS

- A. The following practices are prohibited within protection zones:
 - 1. Storage of construction materials, debris, or excavated material.
 - 2. Parking vehicles or equipment.
 - 3. Foot traffic.
 - 4. Erection of sheds or structures.
 - 5. Impoundment of water.
 - 6. Excavation or other digging unless otherwise indicated.
 - 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- B. Do not direct vehicle or equipment exhaust toward protection zones.
- C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

1.6 Definitions

- A. Caliper: Caliper on young trees is taken six (6) inches above the soil level and measured by a diameter across the tree trunk. For a tree exceeding a four (4) inch caliper, the diameter measurement is then taken at twelve (12) inches above the soil level. For a mature tree, the caliper is taken at chest height, generally 4-1/2 to 5 feet above the soil level. The measurement is taken using a tree caliper, a utensil in the shape of an "F" with an adjustable cross arm to slide and rest up against the trunk to measure the precise distance of the trunk width.

- B. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and indicated on Drawings.
- C. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, and defined by a circle concentric with each tree with a radius equal to the diameter of the drip line unless otherwise indicated.
- D. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

PART 2 - PRODUCTS

2.1 TREE PROTECTION PROTECTIVE FENCE

- A. Existing vegetation and/or trees to remain on the site shall be protected with a five (5) foot high orange plastic snow fence. Fence shall be mounted on two (2) inch diameter lodge pole posts driven into the ground every six (6) feet to a depth of at least two (2) feet. Fence shall be erected and installed around the perimeter dripline of each shrub, tree or groups of shrubs or trees to remain.
 - 1. Snow Fence: Orange, UV resistance, 3-inch thickness, 60 inches in height, oval mesh, extruded thermal plastic polymer, Tenax or equal, fence fabric.
 - 2. Lodgepole: Rough-sawn, sound, new hardwood, redwood, or pressure-preservative-treated Douglas Fir or lodgepole pine, free of knots, holes, cross grain, and other defects, two (2) inches in diameter by length required, and pointed at one end.
 - 3. Signage: Each tree fence shall have a prominently displayed 8.5 inch x 11 inch sign stating "Warning – Protection Zone".
- B. During planting and irrigation operations, protective fencing is not required beneath existing to remain trees and shrubs that fall within the newly landscaped and/or irrigation area.

2.2 TOPSOIL

- A. Natural or cultivated top layer of the soil profile or manufactured topsoil; containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than one (1) inch in diameter; and free of weeds, roots, and toxic and other non-soil materials.

2.3 ORGANIC MULCH

- A. Refer to specification section 32 90 00 "Planting" and match organic mulch material to use in non-bio-retention planting areas.

- B. If specification section 32 90 00 "Planting" is not issued as part of this project, provide the following mulch for non-bio-retention planting areas:
1. Organic Mulch for non-bio-retention planting areas: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of untreated recycled wood chips from Wheeler Zamaroni Landscape Supply.
 - a. Address: 3500 Petaluma Hill Rd, Santa Rosa, CA 95404
 - b. Phone: (707) 543-8400
 - c. Website: <https://wzsupply.com/>
 - d. Email: sales@wzsupply.com

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- B. Prior to demolition and construction, Certified Arborist shall review existing to remain trees and vegetation and prepare a written report(s) as required for the protection, treatment and maintenance of existing trees and vegetation throughout the phases of the Project.
- C. For the record, prepare written report, endorsed by arborist, listing conditions detrimental to tree and plant protection.

3.2 PREPARATION

- A. Inspections: Engage a qualified arborist to direct plant protection measures in the vicinity of trees, shrubs, and other vegetation indicated to remain, to over-see removal and re-installation of existing plant material and to prepare inspection reports.
- B. Locate and clearly identify trees, shrubs, and other vegetation to remain. Tie a 1-inch blue-vinyl tape around each tree trunk at 54 inches above the ground.
- C. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.
- D. Tree-Protection Zones: Mulch areas inside tree-protection zones and other areas if indicated within Drawings.

1. Apply 3-inch minimum thickness of organic mulch. Do not place mulch within 6 inches of tree trunks.

3.3 PROTECTIVE FENCE INSTALLATION

- A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin. Install fencing in a manner that will prevent people from easily entering protected area except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.
 - 1. Plastic Protection Zone Fencing: Neatly install protection zone plastic fabric by securing to posts with plastic bands or steel wires, a minimum of two per post, additionally if required to withstand typical construction activity.
 - 2. Posts: Set or drive posts into ground at least two (2) feet without concrete footings and no more than six (6) feet on center spacing. Where a post is located on existing paving or concrete to remain, provide appropriate means of post support acceptable to Owner's Representative.
 - 3. Access Gates: Install as necessary; adjust to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by Owner's Representative. Install one sign spaced approximately every 50 feet on protection-zone fencing, but no fewer than two signs with each facing a different direction.
- C. Maintain protection zones free of weeds and trash.
- D. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by the Owner's Representative.
- E. Maintain protection-zone fencing and signage in good condition as acceptable to Owner's Representative and remove when construction operations are complete and equipment has been removed from the site.
 - 1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
 - 2. Temporary access is permitted subject to preapproval in writing by arborist if a root buffer effective against soil compaction is constructed as directed by arborist. Maintain root buffer so long as access is permitted.
 - 3. Temporary access is permitted for landscape irrigation and planting operations.

3.4 ARBORIST SUPERVISION

- A. For construction within ten (10) horizontal feet of a tree and/or shrub to remain, with a trunk diameter of twelve (12) inches or larger measured three (3) feet above original finish grade, Contractor shall retain the services of a reputable Arborist certified by the International Society of Arboriculture (ISA) to review the tree(s) and/or shrubs(s), the work to be performed and provide written recommendations to minimize the impact on existing trees and/or shrubs to remain. Submit recommendations to Owner's Representative for review.
- B. Contractor shall implement Arborist recommendations.
- C. Contractor shall consult Arborist for further recommendations if tree(s) and/or shrub(s) appear in failing health until final completion and acceptance of landscape work.

3.5 EXCAVATION

- A. General: Excavation and trenching shall be performed at a minimum, in accordance with these specifications and per Drawings and Details and in accordance with recommendations from project Arborist retained by Contractor.
- B. Trenching near Trees: Where utility trenches are required within protection zones, hand excavate under or around tree roots or tunnel under the roots by drilling, auger boring, or pipe jacking. Do not cut main lateral tree roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots as required for root pruning.
- C. Redirect roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately 3 inches (75 mm) back from new construction and as required for root pruning.
- D. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

3.6 REGRADING

- A. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- B. Lowering Grade within Protection Zone: Where new finish grade is indicated below existing grade around trees, slope grade away from trees as recommended by arborist unless otherwise indicated.
 - 1. Root Pruning: Prune tree roots exposed by lowering the grade. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots as required for root pruning.
- C. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- D. Minor Fill within Protection Zone: Where existing grade is 2 inches or less below elevation of finish grade, fill with topsoil

3.7 ROOT PRUNING

- A. Prune roots that are affected by temporary and permanent construction. Prune roots as follows:
 - 1. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
 - 2. Cut Ends: Coat cut ends of roots more than 1-1/2 inches in diameter with an emulsified asphalt or other coating formulated for use on damaged plant tissues and that is acceptable to arborist.
 - 3. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
 - 4. Cover exposed roots with burlap and water regularly.
 - 5. Backfill as soon as possible.
- B. Root Pruning at Edge of Protection Zone: Prune roots flush with the edge of the protection zone, by cleanly cutting all roots to the depth of the required excavation.
- C. Root Pruning within Protection Zone: Avoid cutting trenches within shrub and/or tree protection zone. If trenching is unavoidable, cut trenches with an air spade tool to expose roots without cutting them. Roots encountered smaller than two (2) inches in diameter may be cut, not torn for removal. Cleanly cut roots as close as possible to excavation. Roots larger than two (2) inches in diameter shall remain.

3.8 CANOPY PRUNING

A. General Pruning Procedures:

1. Prune trees according to ANSI A300 (Part 1).
2. Cut branches with sharp pruning instruments; do not break or chop.
3. Do not apply pruning paint to wounds.

B. Pruning Goals (Prune as follows and under the direction of Certified Arborist):

1. Prune trees to remain to compensate for root loss caused by construction damage. Provide subsequent maintenance during landscape irrigation and planting maintenance period and until "final completion" as recommended by Certified Arborist.
2. Prune to remove dead wood, promote proper structure, thin and open canopy, and for general health for the specific tree species.
3. Prune for clearance from structures, pathways and driveways and streets and for a balanced canopy.

C. Shrubs, Vines, and Ground Covers:

1. Prune, thin, and shape shrubs according to standard horticultural practices.
2. Prune to remove injured or dead branches from shrubs.
3. Cleaning: Chip removed branches and dispose of off-site.

3.9 IRRIGATION

- #### A.
- Irrigate existing vegetation and/or trees to remain and those relocated during hot and/or dry periods and as required to maintain material in a healthy, vigorous condition.

3.10 REMOVE AND RE-INSTALL EXISTING TREES

- #### A.
- Plant material noted on Drawing to be transplanted shall be carefully removed from planting area and planted in new location indicated on Planting Plan. Removal shall consist of digging around the dripline of each plant to be transplanted and to the depth where roots are present. Plant and rootball shall be carefully moved to new planting pit.

B. Re-install transplanted plant material to location indicated on Drawing as follows:

1. Excavate circular pits with sides sloped inward. Trim base leaving center area raised slightly to support root ball and assist in drainage. Do not further disturb base. Scarify sides of plant pit smeared or smoothed during excavation. Excavate approximately planting pit sizes twice the width of the planting pot and equal to the depth of the planting pot.
2. Carefully install root ball without damaging root ball or plant.

3. Set rootball onto compacted native soil so the rootball sits one (1) inch above adjacent finish grade.
4. Amend backfill soil per tree planting detail and landscape planting specifications.
5. Place planting soil around root ball in layers, tamping to settle mix and eliminate voids and air pockets. When pit is approximately one-half backfilled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed. Water again after placing and tamping final layer of planting soil.
6. Stake tree(s) per tree planting detail.

3.11 REPAIR AND REPLACEMENT

- A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by the Owner's Representative.
 1. Submit details of proposed root cutting and tree and shrub repairs.
 2. Have arborist perform the root cutting, branch pruning, and damage repair of trees and shrubs.
 3. Treat damaged trunks, limbs, and roots according to arborist's written instructions.
 4. Perform repairs within 24 hours.
 5. Replace vegetation that cannot be repaired and restored to full-growth status, as determined by the Owner's Representative.
- B. Trees: Remove and replace trees indicated to remain that are more than 25 percent dead or in an unhealthy condition before the end of the maintenance period or are damaged during construction operations that the Owner's Representative determines are incapable of restoring to normal growth pattern.
 1. Provide new trees of same size and species as those being replaced for each tree that measures three (3) inches or smaller in caliper size.
 2. Provide new trees of 48" box size and species as those being replaced for each tree that measures greater than three (3) inches. In addition, the liability to the General Contractor shall be set at \$1,500.00 minimum per tree. The Trunk Formula method for Northern California established by the International Society of Arboriculture must be used to compute the actual value.
 3. Plant and maintain new trees as specified in Section 32 90 00 "Planting."
- C. Soil Aeration: Where directed by the Owner's Representative, aerate surface soil compacted during construction. Aerate 10 feet beyond drip line and no closer than 36 inches to tree trunk. Drill two (2) inch diameter holes a minimum of 12 inches (300 mm) deep at 24 inches o.c. Backfill holes with an equal mix of augured soil and sand.

3.12 REMOVAL OF EXISTING TREES:

- A. Contractor shall remove and demolish from the site trees and vegetation indicated on the Drawings. Additional trees and vegetation conflicting with work require written approval by Owner or Architect.
- B. Tree removal shall include branches, leaves, roots, stumps and stump grindings to a minimum depth of 18" below proposed subgrade. Exact depth shall be determined in accordance with and as required for building and hardscape work included under this contract.
- C. Contractor shall fill depressions caused by tree removal with topsoil or site soil.
- D. Properly dispose of any vegetation debris in a legal and acceptable manner off project/site property.

3.13 MAINTENANCE OF EXISTING SHRUBS AND/OR TREES DURING CONSTRUCTION

- A. Irrigate existing shrubs and/or trees to remain and those relocated during hot and/or dry periods and as required to maintain material in a healthy, vigorous condition.
- B. Do not store equipment, materials or vehicles beneath existing to remain trees.
- C. Contractor shall exercise caution when working around tree canopies to ensure branches are not torn or broken, bark is not damaged and canopy remains intact.
- D. Protect tree and/or shrub root systems from damage caused by runoff or spillage of noxious materials while mixing, placing or storing construction materials. Protect root system from ponding, eroding or excessive wetting caused by dewatering operations.
- E. Monitor existing to remain trees and/or shrubs to remain for pests and diseases and signs of distress. Retain the services of a Certified Arborist to review and remedy signs of distress, pests and/or disease.
- F. Maintain protective fencing at original location in vertical, undamaged condition until all contractors and subcontractors are complete.
- G. The project Certified Arborist shall be notified of any damage that occurs to a protected tree during construction and proper treatment shall be administered as recommended by the Certified Arborist.

END OF SECTION 01 56 39

(Revised 2/6/2024)

SECTION 09 3013

CERAMIC TILING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Porcelain tile.
2. Crack isolation membrane.
3. Metal edge strips.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples:

1. Each type and composition of tile and for each color and finish required.
2. Assembled samples mounted on a rigid panel, with grouted joints, for each type and composition of tile and for each color and finish required.
3. Stone thresholds.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

1.4 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.

1.5 QUALITY ASSURANCE

A. Installer Qualifications:

1. Installer employs Ceramic Tile Education Foundation Certified Installers or installers recognized by the U.S. Department of Labor as Journeyman Tile Layers.

- B. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Build mockup of each type of floor tile installation.
 - 2. Build mockup of each type of wall tile installation.

PART 2 - PRODUCTS

2.1 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide Standard-grade tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCNA installation methods specified in tile installation schedules, and other requirements specified.

2.2 TILE PRODUCTS

- A. Ceramic Tile Type CT-1, CT-2, and PCT-1: Glazed porcelain tile.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by the following manufacturers:
 - a. Arizona Tile
 - b. Daltile.
 - 2. Substitutions: will be allowed upon Architect's approval. Substitution must meet these requirements.
 - 3. Certification: Tile certified by the Porcelain Tile Certification Agency.
 - 4. CT -1: Tile Color, Glaze, and Pattern Basis of Design -Arizona Tile. Item Code: Fibra Tile. Color: Linen. 12 by 24 inches. Thickness: 3/8 inch. Tile to be used on the wall of the kitchen, refer to drawings. Provide sample for final approval.
 - 5. CT -2: Tile Color, Glaze, and Pattern: Basis of Design – DalTile, Natural Hues, Glossy, Item Code: QH63. Color – Pearl White Size 3 by 3 inches and 3 by 6 inches in vertical brick pattern. Thickness: 5/16 inch. Tile to be used in restrooms, refer to drawings. Provide sample for final approval.
 - 6. CT -3: Tile Color, Glaze, and Pattern: Basis of Design – DalTile, Natural Hues, Glossy, Item Code: QH97. Color – Daisy Size 3 by 3 inches and 3 by 6 inches in vertical brick pattern. Thickness: 5/16 inch. Tile to be used in girls' restrooms, refer to drawings. Provide sample for final approval.
 - 7. CT -4: Tile Color, Glaze, and Pattern: Basis of Design – DalTile, Natural Hues, Glossy, Item Code: QH31. Color – Periwinkle. Size 3 by 3 inches and 3 by 6 inches in vertical brick pattern. Thickness: 5/16 inch. Tile to be used in boys' restrooms, refer to drawings. Provide sample for final approval.
 - 8. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile and surfaces. Provide shapes as follows, selected from manufacturer's standard shapes:

2.3 CRACK ISOLATION MEMBRANE

- A. General: Manufacturer's standard product, that complies with ANSI A118.12 for standard performance and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.

2.4 SETTING MATERIALS

- A. Modified Dry-Set Mortar (Thinset): ANSI A118.4.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. ARDEX Americas.
 - b. LATICRETE SUPERCAP, LLC.
 - c. MAPEI Corporation.
 - 2. Provide prepackaged, dry-mortar mix to which only water must be added at Project site.

2.5 GROUT MATERIALS

- A. Standard Cement Grout: ANSI A118.6.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Custom Building Products.
 - b. LATICRETE SUPERCAP, LLC.
 - c. MAPEI Corporation.
 - 2. Final grout color sections will be made from manufactures standard colors provide full color range in submittals. Preliminary Grout color sections are as follows:
 - a. Custom Building Products Grout #10 – Antique White for Kitchen.
 - b. Custom Building Products Grout #381 – Bright White for all others.

2.6 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Metal Edge Strips: Angle or L-shape, height to match tile and setting-bed thickness, metallic or combination of metal and PVC or neoprene base, designed specifically for flooring applications. Use aluminum pieces when possible.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Blanke Corporation.
 - b. Ceramic Tool Company, Inc.

c. Schluter Systems L.P.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 - 1. Verify that substrates for setting tile are firm; dry; clean; free of coatings that are incompatible with tile-setting materials, including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
 - 2. Verify that concrete substrates for tile floors installed with bonded mortar bed or thinset mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with thinset mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
- B. Where indicated, prepare substrates to receive waterproofing by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot toward drains.
- C. Substrate shall have no more than a 1/8" in 10' variance; with no more than 1/16" variation in 24". A substrate that exceeds the ANSI standards must be corrected with an appropriate patching or self-leveling underlayment
- D. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

3.3 CERAMIC TILE INSTALLATION

- A. Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
 - 1. For the following installations, follow procedures in the ANSI A108 series of tile installation standards for providing 95 percent mortar coverage:
 - a. Tile floors consisting of tiles 8 by 8 inches or larger.

- B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- D. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.
- E. Jointing Pattern: Confirm tile layout and pattern with Architect prior to installation. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.
- F. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
 - 1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
- G. Metal Edge Strips: where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with or below top of tile and no threshold is indicated.
- H. Floor Sealer: Apply floor sealer to cementitious grout joints in tile floors according to floor-sealer manufacturer's written instructions. As soon as floor sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.
- I. Install crack isolation membrane to comply with ANSI A108.17 and manufacturer's written instructions to produce membrane of uniform thickness that is bonded securely to substrate.

3.4 INSTALLATION - WALL TILE

- A. Over cementitious backer units on studs, install in accordance with TCA Handbook Method W244, using membrane at toilet rooms.
- B. Over cementitious backer units install in accordance with TCA Handbook Method W223, organic adhesive.
- C. Over gypsum wallboard on wood or metal studs install in accordance with TCA Handbook Method W243, thin-set with dry-set or latex-portland cement bond coat, unless otherwise indicated.

3.4 Where mortar bed is indicated, install in accordance with TCA Handbook Method W222, one coat method.

3.5 Where waterproofing membrane is indicated other than at showers and bathtub walls, install in accordance with TCA Handbook Method W222, one coat method.

3.5 CLEANING

- A. Clean tile and grout surfaces.

3.6 PROTECTION OF FINISHED WORK

- A. Do not permit traffic over finished floor surface for 72 hours after installation.
- B. Cover floors with kraft paper and protect from dirt and residue from other trades.

- a. Where floor will be exposed for prolonged periods cover with plywood or other similar type walkways

END OF SECTION

SECTION 09 91 00
PAINTING AND FINISHING

PART 1 - GENERAL**1.1 SECTION INCLUDES**

- A. Surface preparation.
- B. Painting schedules, including painting of exposed surfaces, interior and exterior, except as otherwise specified or indicated.

1.2 REFERENCES

- A. The publications listed below form a part of this Section to the extent referenced. The publications are referred to in the text by the basic designation only.
- B. Unless otherwise noted, standards, manuals, and codes refer to the latest edition of such standards, manuals, and codes as of the date of issue of this Project Manual
- C. Referenced Standards:
 - 1. ASTM D523 – Standard Test Method for Specular Gloss.
 - 2. The Master Painters Institute, MPI Gloss and Sheen Levels.

1.3 QUALITY ASSURANCE

- A. Product Manufacturer: Company specializing in manufacturing quality paint and finish products with sufficient documented experience.
- B. Applicator: Company specializing in commercial painting and finishing with sufficient documented experience.
- C. Gloss Levels: Per Master Painters Institute (MPI) gloss standards “MPI Gloss and Sheen Levels,” measured in accordance with ASTM D523.

GLOSS LEVEL	DESCRIPTION	GLOSS AT 60 DEGREES ASTM D523	SHEEN AT 85 DEGREES ASTM D523
G1	A traditional matte finish – flat.	5 units, maximum	and 10 units, maximum
G2	A high side sheet flat – “a velvet-like finish.”	10 units, maximum	And 10 – 35 units

G4	A "satin-like" finish	10-25 units	and 35 units maximum
G5	A traditional semi-gloss.	35 - 70 units	-
G6	A traditional gloss.	70 - 85 units	-
G7	A high gloss.	More than 85 units	-

1.4 REGULATORY REQUIREMENTS

- A. Conform to California Building Code for flame spread and smoke density requirements for finishes.
- B. Furnish certification that all paint coatings furnished for the location of the project comply with the EPA clean air act for permissible levels of volatile organic content for architectural coatings applied in California as designated by California Air Resources Board (CARB), 2022 California Green Building Standards Code, and the San Joaquin Valley Air Pollution Control District (SJVAPCD).

1.5 SUBMITTALS

- A. Provide product data on all finishing products.
- B. Submit four brush-out samples 8 inches by 10 inches in size illustrating color and gloss level selected for each surface finishing product scheduled.
- C. Field Sample: Furnish sample of actual paint colors selected on portion of building item to receive paint as directed by Architect, prior to beginning interior and exterior painting.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site in manufacturer's original unopened, labeled containers; inspect to verify acceptance.
- B. Store and protect products from abuse and contamination.
- C. Container labeling is to include manufacturer's name, type of paint, brand name, brand code, coverage, surface preparation, drying time, cleanup, color designation and instructions for mixing and reducing.
- D. Store paint materials at minimum ambient temperature of 50 degrees F and a maximum of 90 degrees F, in well-ventilated area, unless required otherwise by manufacturer's instructions.
- E. Take precautionary measures to prevent fire hazards and spontaneous combustion.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 50 degrees F for 24 hours before, during and 48 hours after application of finishes, unless required otherwise by manufacturer's instructions.

- B. Do not apply exterior coatings during rain or snow, or when relative humidity is above 50 percent, unless required otherwise by manufacturer's instructions.
- C. Minimum Application Temperatures for Latex Paints: 50 degrees F for exterior work and interior work, unless required otherwise by manufacturer's instructions.
- D. Provide lighting level of 80 foot candles measured mid-height at substrate surface.

1.8 EXTRA STOCK

- A. Provide a new and unopened five-gallon container of each type, color and sheen to Owner.
- B. Label each container with color, in addition to the manufacturer's label.

PART 2 - PRODUCTS

2.1 PAINT SYSTEMS, GENERAL

- A. Material Compatibility:
 - 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

2.2 SUSTAINABLE DESIGN REQUIREMENTS

- A. VOC Content: Provide materials that comply with VOC limits set by Rule 4601 of the San Joaquin Valley Air Pollution Control District and the 2019 California Green Building Standards Code Table 5.504.4.3; these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:
 - 1. Flat Paints and Coatings: VOC content not more than 50 g/L.
 - 2. Primers, Sealers, and Undercoaters: VOC content not more than 100 g/L.
 - 3. Nonflat Paints and Coatings: VOC content not more than 100 g/L.
 - 4. Nonflat-high gloss Paints and Coatings: VOC content not more than 150 g/L.
 - 5. Stains: VOC content not more than 250 g/L.
 - 6. Anti-Corrosive and Anti-Rust Paints and Primers applied directly to Ferrous Metals: VOC content not more than 250 g/L.
 - 7. Zinc-Rich Primer applied to Galvanized and Ferrous Metals: VOC content not more than 340 g/L.
 - 8. Varnish: VOC content not more than 450 g/L.

- B. Chemical Components of Field-Applied Interior Paints and Coatings: Provide topcoat paints and anti-corrosive and anti-rust paints applied to ferrous metals that comply with the following chemical restrictions; these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:
1. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
 2. Restricted Components: Paints and coatings shall not contain any of the following:
 - a. Acrolein.
 - b. Acrylonitrile.
 - c. Antimony.
 - d. Benzene.
 - e. Butyl benzyl phthalate.
 - f. Cadmium.
 - g. Di (2-ethylhexyl) phthalate.
 - h. Di-n-butyl phthalate.
 - i. Di-n-octyl phthalate.
 - j. 1, 2-dichlorobenzene.
 - k. Diethyl phthalate.
 - l. Dimethyl phthalate.
 - m. Ethylbenzene.
 - n. Formaldehyde.
 - o. Hexavalent chromium.
 - p. Isophorone.
 - q. Lead.
 - r. Mercury.
 - s. Methyl ethyl ketone.
 - t. Methyl isobutyl ketone.
 - u. Methylene chloride.
 - v. Naphthalene.
 - w. Toluene (methylbenzene).
 - x. 1,1,1-trichloroethane.
 - y. Vinyl chloride.

2.3 ACCEPTABLE MANUFACTURERS – PAINT

- A. Refer to Table at the end of this Section.

2.4 ACCEPTABLE MANUFACTURERS – PRIMER SEALERS

- A. Refer to Table at the end of this Section.

2.5 ACCEPTABLE MANUFACTURERS – STAIN AND CLEAR FINISHES

- A. Refer to Table at the end of this Section.

2.6 MATERIALS

- A. All paint materials shall be provided from a single manufacturer unless noted otherwise in this Section.
- B. Coatings: Ready mixed. Process pigments to a soft paste consistency capable of being readily and uniformly dispersed to a homogeneous coating.
- C. Coatings: Good flow and brushing properties; capable of drying or curing free of streaks or sags.
- D. Accessory Materials: All other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.
- E. All Materials specified by brand name or manufacturer shall be delivered unopened at the job in their original containers.

2.7 FINISHES

- A. Refer to schedule at end of Section for surface finish schedule.

PART 3 - EXECUTION

3.1 GENERAL

- A. Storage: All materials used by the painting contractor shall be stored and mixed in a place designated by the Owner or the Architect. The storage place must be kept neat and clean at all times. All cloths, waste or other material that might constitute a fire hazard shall be placed in a suitable metal container or shall be removed from the site or destroyed at the end of each day's work.

3.2 INSPECTION

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application to the Architect, Architect's representative or inspector in writing. The Architect will cause such defect to be remedied.

- C. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 - 1. Plaster; Gypsum Wallboard: 12 percent.
 - 2. Concrete Masonry Units: 10 percent.
 - 3. Interior Located Wood: 15 percent.
 - 4. Exterior Located Wood: 7 percent.
- D. Beginning of application constitutes acceptance of the surfaces.

3.3 PREPARATION

- A. Remove electrical plates, hardware, light fixture trim, and fittings prior to preparing surfaces or painting.
- B. Correct minor defects and clean surfaces that affect work of this Section.
- C. Seal marks that may bleed through surface finishes.
- D. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- E. Gypsum Board Surfaces: Latex fill minor defects. Spot-prime defects after repair.
- F. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer, unless otherwise recommended by finish coating system manufacturer.
- G. Shop-Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces as recommended by primer manufacturer. Prime shop-primed steel items with steel primers specified in this Section.
- H. Concrete, Stucco and Masonry: All dust and loose mortar shall be removed by sweeping or by brushing with a stiff fiber or wire brush.
 - 1. Concrete and masonry surfaces that show signs of efflorescent shall be treated with a zinc sulfate wash (3lbs. per gallon of water), or by scrubbing affected areas with a solution of muriatic acid. Remove loose crystals and rinse with clear water. Allow to dry thoroughly before painting.
 - a. All surfaces defects and all cracks more than 1/16 inch wide shall be filled with patching plaster or spackle according to package directions and textured to match adjacent areas.
 - b. Form oils or separating agents that might impair the adhesion or the appearance of the specified finish shall be removed before any materials are applied.
 - 2. Plaster work that has cured for less than two months and all other plaster areas that show the presence of excessive amounts of free alkali when tested with phenolphthalein or some other suitable means shall be treated with a zinc sulfate wash (3 lbs. per gallon of water) to neutralize the alkali and obtain the optimum of surface carbonation.
 - a. All surface Cracks greater than 1/32 inch wide, holes and other surface defects shall be repaired as recommended by the finish paint manufacturer's written instructions.

- I. Interior Wood Items Scheduled to Receive Finish: Hand sandpaper and wipe off dust and grit prior to priming. Seal knots, pitch streaks and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats.

1. At woodwork with transparent finish, nail holes, cracks or defects shall be filled with wood filler tinted to match color of stain.

3.4 PROTECTION

- A. Protect elements surrounding the work of this Section from damage or disfiguration.
- B. Repair damage to other surfaces caused by work of this Section.
- C. Furnish drop cloths, shields and protective methods to prevent spray or droppings from disfiguring other surfaces.
- D. Remove empty paint containers from site.

3.5 WORKMANSHIP

- A. All work shall be performed by experienced mechanics in a skillful manner. All materials shall be evenly applied so as to be free from sags, crawls or other defects. Coats shall be of the proper consistency and well brushed out as to show the minimum brush marks, except varnish and enamel which shall be uniformly applied. Brushes shall be clean and in good condition. All areas with a transparent coat will be repainted at contractor's expense.
- B. All painting shall be by brush, except plaster and gypsum board which may be by spraying with back rolling. Underside of soffits, covered walks, acoustical panels and screens may be completed by spraying with back rolling.
- C. No work shall be completed under conditions that are unsuitable for the production of good results. No painting shall be completed while plaster is curing, or while wood sawing, sanding or cleaning is in process. Coats shall be thoroughly dry before the succeeding coat is applied. Finishes shall be uniform as to sheen, shine, color and texture, except when glazing is required.
- D. No exterior painting shall be done in rainy, damp, or frosty weather. No Interior painting or finishing shall be permitted until the building has been thoroughly dried out by artificial heat. A minimum temperature of 50 degrees Fahrenheit shall be maintained in areas where the application or drying of paint is occurring.
- E. This contractor shall take into account that not less than the following percentages of total surfaces shall be painted in deep (dark) tones of color selected: (This includes colors requiring ultra-deep bases)
 1. Walls: 25%
 2. Ceilings: 25%
 3. Doors and Door Frames: 100%

- | | | |
|----|----------------|------|
| 4. | Sheet Metal: | 50% |
| 5. | Exposed Steel: | 100% |

3.6 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
 - 1. Paint mil thicknesses shall not be less than the minimums recommended by the paint manufacturers.
 - 2. No Paint, varnish or stain shall be reduced or applied in any way except as herein specifically called for, or recommended by the manufacturer.
- B. Do not apply finishes to surfaces that are not dry.
- C. Apply each coat to uniform finish.
- D. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
- E. Sand lightly between coats to achieve required finish.
- F. Allow applied coat to dry before next coat is applied.
- G. The number of coats called for in the Painting Schedules included in this specification are the minimum number required. Additional coats may be required to achieve the desired finish.
- H. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- I. Prime back surfaces of interior and exterior woodwork with primer paint, type as recommended by manufacturer.
- J. Prime back surfaces of interior woodwork scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with mineral spirits.

3.7 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Paint interior surfaces of air ducts and convactor heating cabinets that are visible through grilles and louvers with one) coat of flat black paint, to limit of sight line. Paint dampers exposed behind grilles to match face panels. Paint all new interior and exterior exposed ductwork and ductwork supports. Paint all new conduit, pipes and conduit/pipe supports in exposed interior and exterior locations.
- B. Reinstall electrical plates, hardware, light fixture trim, and fittings removed for surface preparation or painting.
- C. Do not paint factory-finished mechanical and electrical equipment.

3.8 CLEANING

- A. As Work proceeds, promptly remove paint where spilled, splashed or spattered.

- B. During progress of Work, maintain premises free of unnecessary accumulation of tools, equipment, surplus materials and debris.
- C. Collect cotton waste, cloths, and material which may constitute a fire hazard, place in closed metal containers and remove from site daily.

3.9 PAINTING SCHEDULE – EXTERIOR SURFACES:

- A. Ferrous Metal
 - 1st coat – Acrylic Low Sheen Primer
 - 2nd and 3rd coats – 100 percent Acrylic Semi-Gloss
- B. Ferrous Metal (Industrial)
 - 1st coat – Epoxy Primer
 - 2nd and 3rd coats – Aliphatic Urethane Gloss Enamel
 - For use at exterior metal architectural features/exposed structure
- C. Galvanized Metal (Handrail and Guardrail Assemblies only)
 - 1st coat – Etch Prep
 - 2nd coat – Epoxy Satin Primer
 - 3rd and 4th coats – High Dispersion Pure Acrylic Polymer
- D. Galvanized Metal and Aluminum (Except Handrail and Guardrail Assemblies)
 - 1st coat – Etch Prep
 - 2nd coat – Acrylic Low Sheen Primer
 - 3rd and 4th coats – 100 percent Acrylic Semi-Gloss
- E. Exposed Concrete and Cement Plaster System with Cementitious Finish Coat
 - 1st coat – Acrylic Flat Primer
 - 2nd and 3rd coats – Elastomeric Flat
- F. Cement Plaster System with Acrylic Finish Coat
 - 1st coat – Acrylic Flat Primer
 - 2nd and 3rd coats – Elastomeric Flat
- G. Wood
 - 1st coat – Acrylic Flat Primer
 - 2nd and 3rd coats – 100 percent Acrylic Flat
- H. Wood
 - 1st coat – Acrylic Flat Primer
 - 2nd and 3rd coats – 100 percent Acrylic Semi-Gloss

3.10 PAINTING SCHEDULE – INTERIOR SURFACES:

- A. Gypsum Board
 - 1st coat – PVA Primer Sealer
 - Texture by
 - 2nd coat – PVA Primer Sealer – Tint towards final color.
 - 3rd and 4th coats – 100 percent Acrylic Semi-Gloss
- B. Wood (Opaque Finish)
 - 1st coat – Acrylic Flat Primer – Tint towards final color.
 - 2nd coat and 3rd coats – 100 percent Acrylic Semi-Gloss
- C. Interior Ferrous Metal
 - 1st coat – Acrylic Low Sheen Primer – Tint towards final color.
 - 2nd coat and 3rd coats – 100 percent Acrylic Semi-Gloss Enamel
 - Typical paint system at all hollow metal doors, pressed metal frames, and exposed steel structure.
- D. Galvanized Metal, Zinc Alloy Metal and Aluminum
 - 1st coat – Etch Prep
 - 2nd coat – Acrylic Low Sheen Primer – Tint towards final color.
 - 2nd coat and 3rd coats – 100 percent Acrylic Semi-Gloss Enamel

PAINTING SCHEDULE

APPLICATION	TYPE	MPI Gloss Level	MANUFACTURER	PRODUCT NUMBER
PRIMERS				
Exterior Ferrous Metal	Acrylic	G2	Kelly-Moore	5725
Exterior Ferrous Metal (Industrial)	Epoxy	G6	Rust-oleum	9103
Exterior Galvanized Metal and Aluminum	Acrylic	G2	Kelly-Moore	5725
Exterior Wood and Pressure Treated Wood	Acrylic	G1	Kelly-Moore	255
Exterior Cement Plaster and Concrete; and Interior Concrete	Acrylic	G1	Kelly-Moore	247
Exterior Cement Plaster System with Acrylic Finish Coat	Acrylic	G1	Kelly-Moore	250
Interior Gypsum Board	PVA	G1	Kelly-Moore	971
Interior Wood	Acrylic	G1	Kelly-Moore	973
Interior Ferrous Metal	Acrylic	G2	Kelly-Moore	5725
Interior Aluminum, Ferrous & Galvanized Metal	Acrylic	G2	Kelly-Moore	5725
FINISHES				
Exterior Ferrous & Galvanized Metal, Aluminum, Wood and Pressure Treated Wood	100 percent Acrylic	G5	Kelly-Moore	1250
Exterior Ferrous Metal (Industrial)	Aliphatic Urethane Enamel	G6	Rust-oleum	3300
Exterior Cement Plaster, Concrete, and CMU	Elastomeric	G1	Kelly-Moore	1128
Exterior Wood and Masonry	100 percent Acrylic	G1	Kelly-Moore	1240A
Exterior Pressure Treated Wood	100 percent Acrylic	G4	Kelly-Moore	1245A
Interior Gypsum Board and Wood	100 percent Acrylic	G5	Kelly-Moore	1650
Interior Ferrous & Galvanized Metal and Aluminum	100 percent Acrylic Enamel	G5	Kelly-Moore	1685
Interior Plaster (existing and new)	100 percent Acrylic Enamel	G5	Kelly-Moore	1685

MISCELLANEOUS				
Interior Sanding Sealer	Oil-based	G1	Old Masters	45004
Exterior Heavy-Duty Cleaner	Water Based	-	Jasco	Prep & Prime
Exterior & Interior Galvanized Metal Etch Prep.	Water Based	-	Jasco	Prep & Prime

END OF SECTION 09 91 00

SECTION 10 14 00
SIGNAGE

PART 1 - GENERAL

1.1 SUMMARY

- A. The work included under this section consists of furnishing all products, materials, finishes, supplies, equipment, tools and transportation, and performing all labor and services necessary for, required in connection with, or properly incidental to furnishing and installing signage as described in this section of the specifications, shown on the accompanying drawings, or reasonably implied therefrom, except as hereinafter specifically excluded.\
- B. Work Summary:
 - 1. Create final production artwork and layouts for each sign face.
 - 2. Furnish materials and labor associated with fabricating and finishing all signs.
 - 3. Provide packaging and transportation of all signs to the project site.
 - 4. Furnish material and labor required for installation of signage.
 - 5. All code required signage shall be field inspected per CBC 11B-703.1.1.2
- C. Alternates
 - 1. Provide separate pricing for alternate designs shown on sheet W3.4. These alternate designs substitute for signs with the same sign type designation shown on sheets W3.1-W3.3. Quantities and locations are the same.

1.2 SUBMITTALS

- A. Color Samples: Submit three sets of 6"x6" samples of each color for approval. See design drawings for colors and materials.
- B. Product Data Sheets. Supply product data sheets for all products used in the manufacture and installation of signage.
- C. Contractor shall be responsible for the structural design of freestanding signs, internal illumination, and methods for fastening and installation.
- D. Applicable Standards and Publications: Unless otherwise specified or shown, signage shall conform to the following standards and publications:
- E. ANSI A-117.1 and the Americans with Disabilities Act (ADA).
- F. ATBCB Design Guidelines for Signage in relation to the Americans with Disabilities Act.
- G. California Building Code (CBC), 2022, Sections 11B-216 and 11B-701-703.
- H. California Grade 2 Braille shall be used whenever Braille symbols are specifically required. Refer to CBC Section 11B-703.

- I. ANSI A-117.1 and the Americans with Disabilities Act (ADA).
- J. ATBCB Design Guidelines for Signage in relation to the Americans with Disabilities Act.
- K. California Building Code (CBC), 2022, Sections 11B-216 and 11B-701-703.
- L. California Grade 2 Braille shall be used whenever Braille symbols are specifically required. Refer to CBC Section 11B-703.
- M. Contractor shall be responsible for the quality of materials and workmanship of any firm acting as the Contractor's subcontractor.
- N. Welding, where required, shall be in accordance with procedures specified in American Welding Society Standards using procedures, materials, and equipment of the type required for the work.

1.3 GUARANTEE

- A. At a minimum, the Contractor shall warrant that all work installed under this Contract is free of defect and will remain in good working order for a period of one year for all surface improvements and five years for all underground work. If warranties specified elsewhere in these documents are for a longer period of time than that specified in this section, the longer warranties shall apply.
- B. Manufacturer's Standard Product Warranties:
 - 1. Plastic Elements: Manufacturer's warranty against yellowing, cracking, crazing, or other visible and performance defects for a period of 5 years from the date of installation.
 - 2. Paint Coating: Acrylic polyurethane coating manufacturer's 5-year warranty against defects in materials.

PART 2 - CODE REQUIRED SIGNAGE

2.1 TYPES OF SIGNS

- A. Room Identification: Interior and exterior signs identifying permanent rooms and spaces shall comply with CBC Sections 11B-703.1, 11B-703.2, 11B-703.3 and 11B-703.5. Where pictograms are provided as designations of permanent rooms and spaces, the pictograms shall comply with CBC Section 11B-703.6 and shall have text descriptors complying with CBC Sections 11B-703.2 and 11B-703.5.
- B. Egress Signage: Signs for means of egress shall comply with CBC Section 11B-216.4.
- C. Directional & Informational: Signs that provide direction to or information about interior and exterior spaces and facilities of the site shall comply with CBC Section 11B-703.5.
- D. Toilet Room Signage: Signage for toilet rooms shall comply with CBC 11B-216.8.
- E. Assistive Listening Systems: Signage for assistive listening systems shall comply with CBC 11B-216.10

- 2.2 RAISED CHARACTERS: Raised characters shall comply with CBC Section 11B-703.2 and shall be duplicated in Braille complying with CBC Section 11B-703.3. Raised characters shall be installed in accordance with CBC Section 11B-703.4.
- 2.3 BRAILLE. Braille shall be contracted (Grade 2) and shall comply with CBC Sections 11B-703.3 and 11B-703.4.
- 2.4 INSTALLATION HEIGHT AND LOCATION. Signs with tactile characters shall comply with CBC Section 11B-703.4.
- 2.5 VISUAL CHARACTERS. Visual characters shall comply with CBC Section 11B-703.5.
- 2.6 PICTOGRAMS. Pictograms shall comply with CBC Section 11B-703.6.
- 2.7 SYMBOLS OF ACCESSIBILITY. Symbols of accessibility shall comply with CBC Section 11B-703.7.
- 2.8 BACKGROUNDS: All sign backgrounds to have a non-glare finish.

PART 3 - PRODUCTS

3.1 MATERIALS

- A. Acrylic Sheet. Cast methyl methacrylate monomer plastic conforming to ASTM D788, Sign Grade; "Plexiglas SQ" by Altuglas or equal, unless otherwise recommended by fabricator. Sizes and thicknesses as shown.
- B. Silicone adhesive to be Dow Corning or approved equal, clear unless otherwise specified.
- C. Adhesive tapes to be 3M or approved equal.
- D. Paint products to be low VOC Matthews Acrylic Polyurethane or approved equal in colors specified. All finishes to be non-glare. Provide primer as recommended by coating manufacturer for each type of substrate.
- E. Screen-printing enamel to be Nazdar or approved equal.
- F. Engraving substrate to be Rowmark or approved equal. www.rowmark.com
- G. Aluminum Sheet and Plate: ASTM B209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with at least the strength and durability properties of Alloy 5005-H32.
- H. Vinyl opaque film with pressure-sensitive adhesive backing, suitable for exterior applications, to be 3M or approved equal.
- I. Sealant: As required to prevent light and water leakage. No exposed sealant shall be allowed except as indicated on the reviewed shop drawings.
- J. LED lighting components to be Bitro Group or approved equal. Light color temp to be warm white, 2,700° K to 3,000° K.

PART 4 - EXECUTION

4.1 GENERAL

- A. Form work to required shapes and sizes, with true curve lines and angles. Provide necessary flanges, lugs and brackets for assembly of units. Use concealed fasteners whenever and wherever possible.
- B. Shop fabricate so far as practicable. Joints shall be fastened flush to conceal reinforcement or welded where thickness or section permits.
- C. Contact surfaces of connected members must be assembled so joints will be tight and practically unnoticeable, with minimal use of filling compound.
- D. Signs shall have fine, even texture and be flat and sound. Lines and miters sharp, arises
- E. unbroken, profiles accurate and ornament true to pattern. Plane surfaces to be smooth flat and without oil-canning, free of rack and twist. Restore texture to filed or cut areas.
- F. Level or straighten wrought work. Members shall have sharp lines and angles and smooth surfaces.
- G. Extruded members to be free from extrusion marks. Square turns and corners sharp, curves true.
- H. Form joints exposed to weather to exclude water.
- I. Finish hollow signs with matching material on all faces, tops, bottoms and ends. Edge joints shall be tightly mitered to give appearance of solid material.
- J. All painted surfaces shall be properly primed. Finish coating of paint to have complete coverage with no light or thin applications allowing substrate or primer to show. Finished surface shall be smooth, free of scratches, gouges, drips, bubbles, thickness variations, foreign matter and other imperfections.
- K. Movable parts, including hardware, are be cleaned and adjusted to operate as designed without binding of deformation of members. Doors and covers shall be centered in openings or frames. All contact surfaces fit tight and even without forcing or warping components.
- L. All fasteners to be non-corrosive.
- M. Security head screw to be used for all fasteners. Contractor to coordinate type of security screws used with campus facilities department.

4.2 CUTTING & FINISHING

- A. All materials shall be cut with proper equipment using sharp blades. Shapes shall have square corners, straight edges and shall be sized as shown in the design drawings. Blade/cutter marks and scratches will not be accepted.
- B. Materials shall be prepared and primed according to product manufacturer's instructions before painting.
- C. Finishes shall be applied according to product manufacturer's instructions, then properly cured and protected after application.

4.3 APPLICATION OF GRAPHICS

- A. All graphics shall be cut, etched and/or printed to comply with the specified typeface and graphic shapes. Graphics and type shall be clean and crisp without deformation of characters, ticks, gaps or irregularities.
- B. Finished surfaces shall be protected from damage during application of graphics.

4.4 PACKAGING

- A. Completed signs shall be packed for shipment to the project site to protect from damage.
- B. Pre-assemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for re-assembly and coordinated installation.

PART 5 - INSTALLATION

5.1 GENERAL

- A. Protect products against damage during field handling and installation. Protect adjacent existing and newly placed construction, landscaping and surrounding wall and/or building finishes as necessary to prevent damage during installation. Paint and touch up any exposed fasteners and connecting hardware to match color and finish of surrounding surface.
- B. All exterior signs to be staked by contractor for owner's approval prior to sign installation or excavation.
- C. Contractor will be responsible for verifying that, at each sign location, there are no utility lines that will be affected by installation of signs. Any damage during installation of signs to utilities will be the sole responsibility of the Contractor to correct and repair.
- D. Furnish inserts and anchoring devices which must be set in concrete or other material for installation of signs. Provide setting drawings, templates, instructions and directions for installation of anchorage devices, which may involve other trades.
- E. Mount signs in proper alignment, level and plumb. When exact position, angle, height or location is in doubt, contact Designer for clarification.
- F. Remove or correct signs or installation work Owner determines as unsafe or as an unsafe condition.

5.2 CLEANING & ADJUSTING

- A. Return items that cannot be refinished in the field to the shop. Make required alterations and refinish entire unit or provide new units.
- B. Verify gaskets and flanges interface properly to provide a lightproof installation at monument sign.

- C. After installation, clean soiled sign surfaces according to manufacturer's instructions. Protect from damage until acceptance by University.
- D. At completion of sign installation, clean exposed sign surfaces. Clean and repair any adjoining surfaces and landscaping that became soiled or damaged as a result of installation of signs.

5.3 PUNCHLIST & PROJECT CLOSEOUT

- A. Sign contractor shall review all installed work with the Client or Client's representative and make all required punchlist corrections. Once complete, the sign contractor shall back-check all punchlist items and receive Client's final approval of installation.

5.4 RECORD DOCUMENTS

- A. As-Built Drawings
- B. The Contractor shall submit to the University's Representative, 10 calendar days after Final Completion, fully updated As-built Drawings and Shop Drawings for review.
- C. The As-Built Drawings and Shop Drawings shall be in PDF format. Email is acceptable.

END OF SECTION 10 14 00

SECTION 10 28 00

TOILET AND RESTROOM ACCESSORIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes the following:
 - 1. Toilet and bath accessories.

1.03 SUBMITTALS

- A. Product Data: Include construction details, material descriptions and thicknesses, dimensions, profiles, fastening and mounting methods, specified options, and finishes for each type of accessory specified.
- B. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required. Use designations indicated in the Toilet and Bath Accessory Schedule and room designations indicated on Drawings in product schedule.

1.04 QUALITY ASSURANCE

- A. Source Limitations: Provide products of same manufacturer for each type of accessory unit and for units exposed to view in same areas, unless otherwise approved by Architect.
- B. Product Options: Accessory requirements, including those for materials, finishes, dimensions, capacities, and performance, are established by specific products indicated in the Toilet and Bath Accessory Schedule.
 - 1. Other manufacturers' products with equal characteristics may be considered. See Division 1 Section "Substitutions."

2. Do not modify aesthetic effects, as judged solely by Architect, except with Architect's approval. Where modifications are proposed, submit comprehensive explanatory data to Architect for review.

1.05 COORDINATION

- A. Coordinate accessory locations with other work to prevent interference with clearances required for access by disabled persons, proper installation, adjustment, operation, cleaning, and servicing of accessories.

1.06 WARRANTY

- A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Manufacturer's Mirror Warranty: Written warranty, executed by mirror manufacturer agreeing to replace mirrors that develop visible silver spoilage defects within minimum warranty period indicated.
 1. Minimum Warranty Period: 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Restroom Accessories;
 1. Bobrick Washroom Equipment, Inc. (Model numbers indicated)
 2. American Specialities, Inc
 3. Bradley Corporation
 4. Deb ProLine Curve

2.02 MATERIALS

Toilet and Restroom Accessories

Section 10 28 00, Page 2

Short Elementary School
San Rafael City Elementary
School District

- A. Stainless Steel: ASTM A 666, Type 304, with No. 4 finish (satin), in 0.0312-inch (0.8-mm) minimum nominal thickness, unless otherwise indicated.
- B. Brass: ASTM B 19, leaded and unleaded flat products; ASTM B 16 (ASTM B 16M), rods, shapes, forgings, and flat products with finished edges; ASTM B 30, castings.
- C. Sheet Steel: ASTM A 366/A 366M, cold rolled, commercial quality, 0.0359-inch (0.9-mm) minimum nominal thickness; surface preparation and metal pretreatment as required for applied finish.
- D. Galvanized Steel Sheet: ASTM A 653/A 653M, G60 (Z180).
- E. Chromium Plating: ASTM B 456, Service Condition Number SC 2 (moderate service), nickel plus chromium electrodeposited on base metal.
- F. Baked-Enamel Finish: Factory-applied, gloss-white, baked-acrylic-enamel coating.
- G. Mirror Glass: ASTM C 1036, Type I, Class 1, Quality q2, nominal 6.0 mm thick, with silvering, electroplated copper coating, and protective organic coating complying with FS DD-M-411.
- H. Galvanized Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.
- I. Fasteners: Screws, bolts, and other devices of same material as accessory unit, tamper and theft resistant when exposed, and of galvanized steel when concealed.

2.03 FABRICATION

- A. General: One, maximum 1-1/2-inch- (38-mm-) diameter, unobtrusive stamped manufacturer logo, as approved by Architect, is permitted on exposed face of accessories. On interior surface not exposed to view or back surface of each accessory, provide printed, waterproof label or stamped nameplate indicating manufacturer's name and product model number.
- B. General: Names or labels are not permitted on exposed faces of accessories. On interior surface not exposed to view or on back surface of each accessory, provide printed, waterproof label or stamped nameplate indicating manufacturer's name and product model number.
- C. Surface-Mounted Toilet Accessories: Unless otherwise indicated, fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with continuous stainless-steel hinge. Provide concealed anchorage where possible.

- D. Keys: Provide universal keys for internal access to accessories for servicing and resupplying.
Provide minimum of six keys to Owner's representative.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
- B. Secure mirrors to walls in concealed, tamper-resistant manner with special hangers, toggle bolts, or screws. Set units level, plumb, and square at locations indicated, according to manufacturer's written instructions for substrate indicated.
- C. Install grab bars to withstand a downward load of at least 250 lbf (1112 N), when tested according to method in ASTM F 446.

3.02 ADJUSTING AND CLEANING

- A. Adjust accessories for unencumbered, smooth operation and verify that mechanisms function properly. Replace damaged or defective items.
- B. Remove temporary labels and protective coatings.
- C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

3.03 TOILET AND BATH ACCESSORY SCHEDULE

- A. Toilet Paper Holder (District Supplied, contractor Installed)
- B. Grab Bars, B-6806:
1. Stainless-Steel Nominal Thickness: Minimum 0.05 inch (1.3 mm).
 2. Mounting: Concealed with manufacturer's standard flanges and anchors.
 3. Gripping Surfaces: Manufacturer's standard slip-resistant texture.
 4. Outside Diameter: 1-1/2 inches (38 mm) for heavy-duty applications.
- C. Toilet Seat Cover Dispenser, B-221.

- D. Sanitary Napkin Receptacle, B-270.
- E. Soap Dispenser, Proline 1-liter Black Marble Dispenser.
- F. Mirror, B-165.

END OF SECTION 10 28 00

**SECTION 11 68 16
PLAY STRUCTURES**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. The extent of work in this Section includes the provision and installation of the play structures with miscellaneous hardware, foundations and appurtenances required for installation.
- B. The general extent of work for this Section is shown on the drawings and includes, but is not limited to, the following:
 - 1. Play Structure – Preschool
 - 2. Play Structure – TK
- C. Related Sections include the following:
 - 1. Specification Section 32 13 13.1 Concrete Work (Landscape)
 - 2. Division 31 for Grading.
- D. Prior to bidding:
 - 1. Contractor shall review play components with manufacturer representative and include in their bid special delivery, delivery lead times, and off-loading requirements (according to size, weight and proportions of play components), recommended rigging procedures, protection and security of play components prior to installation, manufacturer recommended footings and installation procedures.
 - 2. Contractor shall review manufacturer's installation manual and include recommended procedures in their bid.

1.3 REFERENCES AND STANDARDS

- A. ASTM: American Society for Testing and Materials.
- B. CPSC: Consumer Product Safety Commission.
- C. IPEMA: International Playground Equipment Manufacturer's Association.
- D. ADA: Americans with Disabilities Act.

- E. ISO: International Organization for Standardization.
- F. CPSI: Certified Playground Safety Inspector by the National Recreation and Park Association.

1.4 QUALITY ASSURANCE

- A. All manufactured items shall be inspected and approved upon delivery by Contractor.
- B. Unless otherwise specified, install all materials in accordance with manufacturer's recommendations.
- C. Play structure manufacturer shall carry International Organization for Standardization (ISO) certification ISO 9001 for customer focused, emphasizing continuous improvement in quality and ISO 14001 for operating in a manner that is environmentally conscious.
- D. Play structure manufacturer shall be a member in good standing with the International Play Equipment Manufacturers Association (IPEMA), and be Third Party Certified conforming to ASTM F1487-11, excluding sections 7.1.1, 10 and 12.6.1 Standard Consumer Safety Performance Specification for Playground Equipment for Public Use.
- E. Play structure and installation methods shall conform to the U.S. Consumer Product Safety Commission (CPSC) "Public Playground Safety Handbook" (Publication No. 325 CPSC, www.cpsc.gov/PageFiles/122149/325.pdf).
- F. Contractor installing play structure shall have installed at least 20 play structures of similar magnitude, size and complexity within the last 5 years on a DSA approved California school campus.
- G. Play structure shall conform to regulations published in the Code of Federal Regulations (CFR) for the following:
 - 1. 16 CFR 1303 Ban of Lead-containing paint and certain consumer products bearing lead-containing paint.
 - 2. 16 CFR 1501 Method for identifying toys and other articles intended for use by children under 3 years of age which present choking, aspiration or ingestion hazards because of small parts.
 - 3. 15 CFR 1500.48 Technical requirements for determining a sharp point in toys and other articles intended for use by children under 8 years of age.
- H. Design and installation shall meet or exceed the Americans with Disabilities Act (ADA) "2010 ADA Standards for Accessible Design".

I. Play structure finishes shall conform to the following:

1. ASTM D 522 for flexibility.
2. ASTM D 4541 for adhesion.
3. ASTM D 2794 for impact resistance.
4. ASTM D 523 for gloss.
5. ASTM D 4060 for taber abrasion.
6. ASTM D 638 for tensile strength.
7. ASTM D 638 for % elongation.
8. ASTM D 2247 for humidity resistance.
9. ASTM B 117 for salt spray.
10. ASTM G 53 for QUV.

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's technical data and installation instructions for play structure(s). Submit the following:

1. Play structure manufacturer and manufacturer's representative's name(s) and address(es).
2. Plan view drawings with model numbers, descriptive labels (including component names), deck heights, and notations of compliance with CPSC, ASTM F1487 and ADA.
3. Detailed component list with model numbers and catalog descriptions.
4. Manufacturer's Standard Color Chart.
5. Written material specifications for all components.
6. IPEMA certification certificate from the IPEMA website.
7. Copy of manufacturer's warranty in certificate format.
8. Copy of manufacturer's ISO 9001 Certification.

B. Spare or replacement parts, if provided, and/or maintenance care instructions shipped with components shall be delivered to Owner's Representative prior to substantial completion.

C. Third Party Certified Playground Safety Inspector (CPSI): Identify third party safety inspector name, address and phone number Contractor shall retain for installation inspection.

1.6 WARRANTY/GUARANTEE

- A. The structure manufacturer shall warrant material and workmanship against defects, from the date of manufacturer's invoice, for the period of time as follows:
 - 1. Limited Warranty for as long as you own the product against structural failure due to corrosion or defects in materials and workmanship on aluminum decks, steel deck posts, clamping/fastening and associated fastening hardware.
 - 2. Limited fifteen (15) year warranty against structural failure due to corrosion or defects in materials and workmanship on steel support legs, steel components including railings, rungs and rigid climbers.
- B. Contractor shall guarantee installation workmanship for a period of one year from the date of substantial completion of the project. The Contractor shall be responsible for coordinating manufacturer material warranty items with the manufacturer/distributor and for the installation of replacement materials(s) at no additional cost to the owner.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Contractor shall schedule delivery and receive play structures specified within this Specification whether purchased as part of this project or purchased by Owner. Receiving process shall include off-loading play structure and accompanying components, taking inventory, accepting delivery and follow-up in event parts are missing and/or damaged, to ensure all components required are delivered in good condition.
- B. Contractor shall contact play structure supplier and/or delivery company and verify size and weight of items delivered and provide adequate equipment to facilitate safe and proper off-loading procedures acceptable to the manufacturer.
- C. Store and handle products so as not to impede work of others.
- D. Protect products from damage or theft during delivery, handling, storage and installation.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Structure: See drawings and details for type, style, configuration, size and height of play structure(s) to be provided.
- B. Colors: Shall be selected from manufacturer's standard colors.

- C. Model and Manufacturer: specified for play structures are school district standard.
Substitutions will not be allowed.

Description	Manufacturer	Model #	Local Rep
Play Structure – Preschool	GameTime Recreation	Refer to drawings	MRC / GameTime
Play Structure – TK	GameTime Recreation	Refer to drawings	MRC / GameTime

Local Representative(s)	Phone	Website	Email
MRC/Game Time Contact: Leo Seavey	(415) 246-9022	Gametime.com	lseavey@mrcrec.com

Contractor shall purchase touch-up paint for each color of powder coated products for use as needed after installation. Deliver un-used touch-up paint to Owner prior to substantial completion for new play structure(s).

PART 3 - EXECUTION

3.1 SEQUENCING AND SCHEDULING

- A. Coordinate construction timing with installation of site furnishings in conformance with other pertinent Sections of the Specifications.

3.2 INSTALLATION

- A. Contractor shall coordinate installation of play structure with installation of perimeter curbing, subsurface drainage, underground utilities, base installation and resilient surfacing installation.
- B. Contractor shall review sub-base per safety requirements.
- C. Contractor shall lay out footing locations and obtain manufacturer approval on safety clearances in writing prior to installation of adjacent hardscape.
- D. Resilient Surfacing: Contractor shall review resilient surfacing area prior to installation of play structure. Contractor shall verify fall attenuation is adequate for proposed play structure fall heights and verify Americans with Disabilities Act (ADA) access to points of entry and exit.

- E. Concrete Footings: Install footings with top of concrete sloped to drain at 1%. Install where shown on drawings and as detailed and per manufacturer's instructions.
- F. Installation instructions, detailed, printed installation instructions, written in English, shall be provided by the manufacturer which shall include detailed, scaled plan views, elevations and footing drawings and details when applicable, as well as sequential assembly instructions to assure proper installation of the playground structure(s).
- G. Contractor shall install play structure according to manufacturer's installation instructions.
- H. Contractor shall keep site clean. Tools, trash, debris and surplus installation materials shall be removed on a daily basis.
- I. Materials may be stored on site during installation with appropriate protective measures for job site safety and to protect from theft.

3.3 FIELD QUALITY CONTROL

- A. The contractor is responsible for hiring a Third-Party Certified Playground Inspector (CPSI), not employed by the installer. The contractor shall obtain sign-off in writing from the third-party CPSI ensuring that all areas of the play structure (including new play structures, retrofit play structures, and existing play structures within the area of work) meet the current national standards set by the American Society for Testing and Materials (ASTM) and U.S. Consumer Product Safety Commission (CPSC), by said CPSI before the play structure is open for use.

3.4 CLOSE-OUT

- A. Contractor shall provide Owner's Representative with written certification of installation by Third-Party Certified Playground Safety Inspector.
- B. Contractor shall provide Owner's Representative with one (1) copy of complete manufacturer's installation instructions and maintenance kit, if provided.
- C. Contractor shall deliver spare and/or replacement parts, if provided, to Owner's Representative prior to substantial completion.
- D. Contractor shall purchase and deliver touch-up paint for each powder-coat color represented on play structure(s) to Owner's Representative.

END OF SECTION 11 68 16

(Revised 1/30/2024)

22 00 00

PLUMBING GENERAL CONDITIONS

PART 1 – GENERAL**1.1 SUMMARY**

- A. THIS SECTION SPECIFIES THE DIVISION 22 WORK COORDINATION REQUIREMENTS WITH GENERAL WORK PROVISIONS.
- B. FOR CONVENIENCE AND REFERENCE THE DIVISION 22 SPECIFICATIONS ARE SEPARATED INTO DIVISIONS AND SECTIONS. SUCH SEPARATIONS SHALL NOT OPERATE TO MAKE THE ENGINEER AN ARBITRATOR TO ESTABLISH SUBCONTRACT LIMITS BETWEEN THE PRIME CONTRACTOR AND HIS SUBCONTRACTORS. IN ANY CASE, THE PRIME CONTRACTOR IS RESPONSIBLE TO THE OWNER FOR A COMPLETE JOB.
- C. THIS SECTION CONSISTS OF GENERAL REQUIREMENTS AND STANDARD SPECIFICATIONS COVERING CERTAIN PARTS OF WORK UNDER DIVISION 22 AND IS SUPPLEMENTED BY OTHER DIVISION 22 SECTIONS COVERING ADDITIONAL WORK, REQUIREMENTS, AND MATERIALS SPECIFICALLY APPLICABLE TO THE WORK OF EACH SECTION.
 - 1. REQUIREMENTS OF SUBSEQUENT SECTIONS OF THE SPECIFICATIONS, IF IN CONFLICT WITH THESE GENERAL REQUIREMENTS, SHALL GOVERN.
- D. NO MATERIAL INSTALLED AS PART OF THIS WORK SHALL CONTAIN ASBESTOS IN ANY FORM.

1.2 CONDITIONS OF THE CONTRACT

- A. THE CONDITIONS OF THE CONTRACT (GENERAL, SUPPLEMENTARY, AND OTHER CONDITIONS) AND THE GENERAL REQUIREMENTS (SECTIONS OF DIVISION 1) ARE HEREBY MADE A PART OF THIS SECTION.
- B. THIS SECTION IS A DIVISION_22 BASIC MATERIALS AND METHODS SECTION AND IS A PART OF EACH DIVISION _22 SECTION.

1.3 DESCRIPTION OF REQUIREMENTS

- A. PROVIDE FINISHED WORK, TESTED AND READY FOR OPERATION INCLUDING APPARATUS, APPLIANCES, MATERIALS, AND WORK. PROVIDE INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE AND READY FOR OPERATION WITHOUT ADDITIONAL EXPENSE TO THE OWNER.
- B. BEFORE BEGINNING WORK OR ORDERING MATERIALS, CONSULT ARCHITECT FOR CLARIFICATION OF DISCREPANCIES BETWEEN, OR QUESTIONABLE INTENT, OF THE CONTRACT DOCUMENTS.
- C. CONTRACTOR SHALL VISIT THE SITE AND FIELD SURVEY THE EXISTING SITE CONDITIONS PRIOR TO BID. ANY SITE CONDITIONS WHICH MAY CAUSE SIGNIFICANT DEVIATION FROM THE DESIGN DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE FOR CLARIFICATION PRIOR TO BID.

1.4 REQUIREMENTS OF REGULATORY AGENCIES:

- A. PROVIDE WORK AND MATERIALS IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE FOLLOWING:
 - 1. CALIFORNIA CODE OF REGULATIONS _ TITLE 24 _ PARTS 2, 3, 4,5, AND 9
 - 2. CALIFORNIA CODE OF REGULATIONS _ TITLE 22 _ CHAPTER 7
 - 3. CALIFORNIA BUILDING CODE, 2022
 - 4. CALIFORNIA MECHANICAL CODE, 2022
 - 5. CALIFORNIA PLUMBING CODE, 2022
 - 6. CALIFORNIA ELECTRIC CODE, 2022

7. CALIFORNIA FIRE CODE, 2022
 8. CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS 2022
 9. CALIFORNIA GREEN BUILDING STANDARDS 2022
 10. CALIFORNIA ENERGY CODE 2022
 11. NATIONAL FIRE PROTECTION ASSOCIATION
 12. CAL_OSHA
 13. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
 14. STATE FIRE MARSHAL, TITLE 19 CCR
 15. OTHER APPLICABLE STATE LAWS
- B. NOTHING IN DRAWINGS OR SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.
- C. CONFORM TO STATE OF CALIFORNIA ENERGY CONSERVATION STANDARDS FOR ALL SYSTEMS, EQUIPMENT, AND CONSTRUCTION.
- D. THE ABOVE CODES AND STANDARDS DEFINE MINIMUM REQUIREMENTS REQUIRED FOR THE PROJECT. WHERE CONTRACT DOCUMENTS DIFFER FROM GOVERNING CODES, FURNISH AND INSTALL HIGHER STANDARD.

1.5 FEES, PERMITS, AND UTILITY SERVICES:

- A. ARRANGE FOR REQUIRED INSPECTIONS AND PERMITS REQUIRED IN INSTALLATION OF THE WORK.
- B. THE OWNER WILL PAY CHARGES FOR PERMITS REQUIRED.
- C. ARRANGE FOR UTILITY CONNECTIONS AND PAY CHARGES INCURRED, INCLUDING EXCESS SERVICE CHARGES, IF ANY.

1.6 SITE EXAMINATION:

- A. EXAMINE SITE, VERIFY DIMENSIONS AND LOCATIONS AGAINST DRAWINGS, AND INFORM SELF OF CONDITIONS UNDER WHICH WORK IS TO BE DONE BEFORE SUBMITTING PROPOSAL. NO ALLOWANCE WILL BE MADE FOR EXTRA EXPENSE ON ACCOUNT OF ERROR.
- B. INFORMATION SHOWN RELATIVE TO EXISTING SERVICES IS BASED UPON AVAILABLE RECORDS AND DATA BUT IS APPROXIMATE ONLY. MAKE MINOR DEVIATIONS FOUND NECESSARY TO CONFORM WITH ACTUAL LOCATIONS AND CONDITIONS WITHOUT EXTRA COST. VERIFY LOCATION AND ELEVATION OF UTILITIES PRIOR TO COMMENCEMENT OF EXCAVATION FOR NEW PIPING OR ITS INSTALLATION.
- C. EXERCISE CARE IN EXCAVATING NEAR EXISTING UTILITIES TO AVOID ANY DAMAGE THERETO. THIS CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE CAUSED BY HIS OPERATIONS.

1.7 ACTION SUBMITTALS / MATERIAL LIST AND SUBSTITUTIONS:

- A. PRIOR TO COMMENCEMENT OF WORK, AND WITHIN 35 DAYS AFTER AWARD OF CONTRACT, SUBMIT TO ARCHITECT FOR REVIEW ELECTRONIC COPIES OF A COMPLETE LIST OF EQUIPMENT AND MATERIALS TO BE FURNISHED, INCLUDING ALL SUBSTITUTIONS. ALL SUBMITTALS TO BE IN ELECTRONIC FORMAT AS FOLLOWS:
 1. SUBMITTALS TO BE IN PDF FORMAT.
 2. INDIVIDUAL PDF CUT SHEETS SHALL BE INSERTED INTO A SINGLE FILE FOR REVIEW.
 3. ALL SHEETS TO BE "UNPROTECTED" AND "WRITABLE".
- B. PROVIDE SUBMITTAL INFORMATION FOR ALL MATERIALS PROPOSED FOR USE AS PART OF THIS PROJECT. PROVIDE STANDARD ITEMS ON SPECIFIED EQUIPMENT AT NO EXTRA COST TO THE CONTRACT REGARDLESS OF DISPOSITION OF SUBMITTAL DATA. OTHER MATERIAL OR METHODS SHALL NOT BE USED UNLESS APPROVED IN WRITING BY THE ARCHITECT. THE ARCHITECT'S REVIEW WILL BE REQUIRED EVEN THOUGH "OR EQUAL" OR SYNONYMOUS TERMS ARE USED.
- C. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ASSUME ALL COSTS INCURRED BECAUSE OF ADDITIONAL WORK AND/OR CHANGES REQUIRED TO INCORPORATE THE PROPOSED SUBSTITUTE INTO THE PROJECT INCLUDING POSSIBLE EXTRA COMPENSATION DUE TO THE ARCHITECT. REFER TO DIVISION 1 FOR COMPLETE

INSTRUCTIONS.

- D. CONTRACTOR TO PROVIDE COMPLETE SUBMITTAL PACKAGES FOR ALL PLUMBING ITEMS CLEARLY SEPARATED BY SYSTEM. AT A MAXIMUM, SUBMITTALS TO BE BROKEN INTO THE FOLLOWING PACKAGES:
 - 1. PLUMBING - FIXTURES, TRIM, PIPING, EQUIPMENT, ACCESSORIES, ETC.
 - 2. INCOMPLETE SUBMITTALS OR SUBMITTALS BROKEN DOWN BY SPEC SECTION SHALL BE RETURNED UN-REVIEWED.
- E. IDENTIFY EACH ITEM BY MANUFACTURER, BRAND, TRADE NAME, MODEL NUMBER, SIZE, RATING, OR WHATEVER OTHER DATA IS NECESSARY TO PROPERLY IDENTIFY AND REVIEW MATERIALS AND EQUIPMENT.
 - 1. WHERE SUBMITTAL SHEETS INDICATE MORE THAN ONE PRODUCT, CONTRACTOR TO CLEARLY IDENTIFY PRODUCT BEING SUBMITTED. CONTRACTOR TO CROSS-OUT INFORMATION NOT BEING SUBMITTED FOR REVIEW.
 - 2. SUBMITTALS THAT DO NOT CLEARLY IDENTIFY SUBMITTED ITEM WILL BE RETURNED TO THE CONTRACTOR UN-REVIEWED.
- F. IDENTIFY EACH SUBMITTED ITEM BY REFERENCE TO SPECIFICATION SECTION NUMBER AND PARAGRAPH IN WHICH ITEM IS SPECIFIED. CROSS REFERENCE SUBMITTALS BY EQUIPMENT ID WHERE APPLICABLE.
- G. QUANTITIES ARE THE CONTRACTOR'S RESPONSIBILITY AND WILL NOT BE REVIEWED.
- H. IF CONTRACTOR DESIRES TO MAKE A SUBSTITUTION, HE SHALL SUBMIT COMPLETE INFORMATION OR CATALOG DATA TO SHOW EQUALITY OF EQUIPMENT OR MATERIAL OFFERED TO THAT SPECIFIED.
 - 1. ONLY ONE REQUEST FOR SUBSTITUTION WILL BE CONSIDERED ON EACH ITEM OF MATERIAL OR EQUIPMENT. NO SUBSTITUTIONS WILL BE CONSIDERED THEREAFTER.
 - 2. SCHEDULED PRODUCTS AND FIRST NAMED MANUFACTURER/PRODUCT FORMS BASIS OF DESIGN. ALL OTHER MANUFACTURERS' PRODUCTS ARE SUBSTITUTIONS.
 - 3. NO SUBSTITUTIONS WILL BE ALLOWED UNLESS REQUESTED AND REVIEWED IN WRITING.
 - 4. THE ARCHITECT SHALL REVIEW AND TAKE APPROPRIATE ACTION ON SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND OTHER SUBMITTALS REQUIRED BY THE CONTRACT DOCUMENTS. SUCH REVIEW SHALL BE ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. IT SHALL NOT INCLUDE REVIEW OF QUANTITIES, DIMENSIONS, WEIGHTS OR GAUGES, FABRICATION PROCESSES, CONSTRUCTION METHODS, COORDINATION WITH THE WORK OF OTHER TRADES, OR CONSTRUCTION SAFETY PRECAUTIONS, ALL OF WHICH ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
 - 5. REVIEW OF A SPECIFIC ITEM SHALL NOT INDICATE ACCEPTANCE OF AN ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. THE ARCHITECT SHALL NOT BE REQUIRED TO REVIEW AND SHALL NOT BE RESPONSIBLE FOR ANY DEVIATIONS FROM THE CONTRACT DOCUMENTS NOT CLEARLY NOTED BY THE CONTRACTOR, NOR SHALL THE ARCHITECT BE REQUIRED TO REVIEW PARTIAL SUBMISSIONS OR THOSE FOR WHICH SUBMISSIONS FOR CORRELATED ITEMS HAVE NOT BEEN RECEIVED. ARCHITECT RESERVES RIGHT TO REQUIRE ORIGINALLY SPECIFIED ITEM.
 - 6. NAMED NON-BASIS-OF-DESIGN MANUFACTURER DOES NOT GUARANTEE APPROVAL OF EQUIPMENT SUBMITTALS. MANUFACTURERS MUST COMPLY WITH ALL THE PERFORMANCE AND FEATURES AS SPECIFIED WITHIN THE SPECIFICATIONS AND AS INDICATED ON THE DESIGN DOCUMENTS.
- I. INSTALLATION OF REVIEWED SUBSTITUTION IS CONTRACTOR'S RESPONSIBILITY. ANY CHANGES REQUIRED FOR INSTALLATION OF REVIEWED SUBSTITUTED EQUIPMENT MUST BE MADE WITHOUT ADDITIONAL COST TO THE OWNER. REVIEW BY THE ARCHITECT OF THE SUBSTITUTED EQUIPMENT AND/OR DIMENSIONAL DRAWINGS DO NOT WAIVE THESE REQUIREMENTS.

1.8 CLOSEOUT SUBMITTALS / MAINTENANCE AND OPERATING INSTRUCTIONS:

- A. INSTRUCT THE OWNERS' AUTHORIZED REPRESENTATIVES IN THE OPERATION, ADJUSTMENT, AND MAINTENANCE OF ALL MECHANICAL EQUIPMENT AND SYSTEMS. PROVIDE 3 COPIES OF

CERTIFICATE SIGNED BY OWNER'S REPRESENTATIVES ATTESTING TO THEIR HAVING BEEN INSTRUCTED.

- B. FURNISH ARCHITECT WITH THREE COMPLETE SETS OF OPERATING AND MAINTENANCE (O&M) INSTRUCTIONS.
 - 1. O&M MANUALS TO BE BOUND IN HARDBOARD BINDER AND INDEXED.
 - 2. O&M MANUALS TO INCLUDE: DESCRIPTIVE LITERATURE, CATALOG CUTS, AND DIAGRAMS COVERING ALL ITEMS OF OPERATION AND MAINTENANCE FOR EACH AND EVERY MECHANICAL SYSTEM AND PIECE OF EQUIPMENT FURNISHED UNDER THESE SPECIFICATIONS.
 - 3. INCLUDE IN EACH SET A COPY OF THE AIR BALANCE TEST REPORT SPECIFIED HEREINAFTER.
- C. CONTRACTOR MUST START COMPILING THE ABOVE DATA (INCLUDING OBTAINING OPERATING AND MAINTENANCE INSTRUCTION DATA AND CATALOG CUTS AND DIAGRAMS FROM THE MANUFACTURER OF THE REVIEWED EQUIPMENT) IMMEDIATELY UPON REVIEW OF HIS LIST OF MATERIALS, SO AS NOT TO DELAY THE FINAL INSTALLATION OF THE WORK.
- D. BIND AND INDEX EACH SET IN A DURABLE, HARDBOARD BINDER. FINAL OBSERVATION WILL NOT BE MADE UNTIL BOOKLETS ARE SUBMITTED AND HAVE BEEN REVIEWED BY THE ARCHITECT.
- E. O&M MANUALS TO INCORPORATE THE FOLLOWING:
 - 1. COMPLETE OPERATING INSTRUCTIONS FOR EACH ITEM OF PLUMBING EQUIPMENT.
 - 2. TEST DATA AND SYSTEM BALANCING REPORTS AS SPECIFIED.
 - 3. MANUFACTURER'S BULLETINS WITH PARTS NUMBERS, INSTRUCTIONS, ETC. FOR EACH ITEM OF EQUIPMENT. REMOVE INFORMATION NOT APPLICABLE TO PROJECT.
 - 4. TYPEWRITTEN MAINTENANCE INSTRUCTIONS FOR EACH ITEM OF EQUIPMENT LISTING IN DETAIL THE LUBRICANTS TO BE USED, FREQUENCY OF LUBRICATIONS, INSPECTIONS REQUIRED, ADJUSTMENT, ETC.
 - 5. A COMPLETE LIST AND/OR SCHEDULE OF ALL MAJOR VALVES GIVING THE VALVE ID, LOCATION OF VALVE, AND THE ROOMS OR AREA CONTROLLED BY THE VALVE.
 - 6. PROVIDE COPIES OF START-UP REPORTS FOR EACH PIECE OF EQUIPMENT PROVIDED AS PART OF THIS WORK.
 - 7. NAME, ADDRESS, AND PHONE NUMBER OF CONTRACTORS INVOLVED IN WORK UNDER THIS DIVISION.
 - 8. DETAILED STEP-BY-STEP INSTRUCTIONS FOR STARTING, SUMMER OPERATION, WINTER OPERATION, AND SHUTDOWN OF EACH SYSTEM.
 - 9. DETAILED MAINTENANCE INSTRUCTIONS FOR STARTING, SUMMER OPERATION, WINTER OPERATION, AND SHUTDOWN OF EACH SYSTEM.
 - 10. SPARE PARTS LIST.
 - 11. FULL SIZE RECORD AS BUILT SHOP DRAWINGS IN HARD COPIES AND IN AUTOCAD 2013 CAD FILES.
 - a. CONTRACTOR TO INCORPORATE FIELD MARK-UPS INTO RECORD DRAWINGS. MARK-UP SHOP DRAWINGS NOT ACCEPTABLE.

1.9 SITE CONDITIONS

A. INFORMATION OF THE DRAWINGS RELATIVE TO EXISTING CONDITIONS IS APPROXIMATE ONLY. DEVIATIONS FOUND NECESSARY DURING PROGRESS OF CONSTRUCTION TO CONFORM TO ACTUAL CONDITIONS AS APPROVED BY THE ARCHITECT SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE CAUSED TO EXISTING SERVICES. PROMPTLY NOTIFY THE ARCHITECT IF SERVICES ARE FOUND WHICH ARE NOT SHOWN ON THE DRAWINGS.

1.10 WARRANTY

- A. BE RESPONSIBLE FOR WORK DONE AND MATERIAL INSTALLED UNDER THESE PLANS AND SPECIFICATIONS. REPAIR OR REPLACE, AS MAY BE NECESSARY, ANY DEFECTIVE WORK, MATERIAL, OR PART WHICH MAY SHOW DAMAGE TO ITSELF OR OTHER MATERIALS, FURNISHING, EQUIPMENT, OR PREMISES CAUSED BY SUCH DEFECTS DURING THIS PERIOD, IF IN

THE OPINION OF THE ARCHITECT SAID DEFECT IS DUE TO IMPERFECTION OF MATERIAL OR WORKMANSHIP. PROVIDE ALL SUCH WORK AND MATERIALS AT NO COST TO OWNER.

- B. BE RESPONSIBLE FOR DAMAGE TO ANY PART OF PREMISES DURING GUARANTEE PERIOD CAUSED BY LEAKS OR BREAKS IN WORK FURNISHED AND/OR INSTALLED UNDER THIS SECTION. REPLACE REFRIGERANT, LUBRICANTS, OR GASSES LOST AS RESULT OF DEFECTS, BREAKS, OR LEAKS IN WORK.
- C. PROVIDE MANUFACTURER'S WRITTEN WARRANTIES COVERING DEFECTS IN MATERIAL AND WORKMANSHIP OF PRODUCTS AND EQUIPMENT UTILIZED FOR THE PROJECT.
- D. WARRANTIES SHALL BE FOR A PERIOD OF 1 YEARS FROM THE DATE OF SUBSTANTIAL COMPLETION UNLESS MORE STRINGENTLY SPECIFIED WITHIN INDIVIDUAL SECTIONSOFS THIS DIVISION.

PART 2 – PRODUCTS

2.1 GENERAL:

- A. MENTION HEREIN OR ON DRAWINGS REQUIRES THAT THIS CONTRACTOR PROVIDE EACH ITEM LISTED OF QUALITY NOTED OR EQUAL. REFER TO SUBSEQUENCE DIVISION 22 SPECIFICATION SECTIONS FOR SPECIFIC EQUIPMENT AND SYSTEM MATERIALS AND ACCESSORIES.
- B. ALL MATERIAL SHALL BE NEW, FULL WEIGHT, STANDARD IN ALL RESPECTS, AND IN FIRST_ CLASS CONDITION.
- C. PROVIDE MATERIALS OF THE SAME BRAND OR MANUFACTURE THROUGHOUT FOR EACH CLASS OF MATERIAL OR EQUIPMENT WHEREVER POSSIBLE.
- D. THE GRADE OR QUALITY OF MATERIALS DESIRED IS INDICATED BY THE TRADE NAMES OR CATALOG NUMBERS STATED HEREIN.
- E. DIMENSIONS, SIZES, AND CAPACITIES SHOWN ARE A MINIMUM AND SHALL NOT BE CHANGED WITHOUT PERMISSION OF THE ARCHITECT.
- F. CONFORM TO THE STATE ENERGY CONSERVATION STANDARDS FOR ALL MATERIAL AND EQUIPMENT.

2.2 MATERIALS FURNISHED:

- A. IDENTIFY ALL MATERIALS AND EQUIPMENT BY MANUFACTURER'S NAME AND MODEL NUMBER. REMOVE UNIDENTIFIED MATERIALS AND EQUIPMENT FROM SITE.
- B. EQUIPMENT SPECIFIED BY MANUFACTURER'S NUMBER SHALL INCLUDE ALL ACCESSORIES, CONTROLS, ETC. LISTED IN CATALOG AS STANDARD WITH EQUIPMENT. FURNISH OPTIONAL OR ADDITIONAL ACCESSORIES AS SPECIFIED.
- C. EQUIPMENT OR MATERIAL DAMAGED DURING TRANSPORTATION, INSTALLATION, OR OPERATION IS CONSIDERED AS TOTALLY DAMAGED. REPLACE WITH NEW EQUIPMENT. VARIANCE FROM THIS PERMITTED ONLY WITH WRITTEN CONSENT OF THE ARCHITECT.
- D. DELIVER, PROTECTION, AND CARE:
 - 1. DELIVER MATERIALS OR EQUIPMENT TO THE PROJECT IN THE MANUFACTURER'S ORIGINAL, UNOPENED, LABELED CONTAINERS.
 - 2. ADDED COSTS ASSOCIATED WITH REORDERING, EXPEDITING ORDERS, OR PROJECT DELAYS DUE TO REJECTED MATERIALS SHALL BE BORNE BY THE CONTRACTOR.
 - 3. PROTECT FROM DAMAGE WHICH MAY BE CAUSED BY THEFT, WEATHER, AND BUILDING OPERATIONS. FAILURE TO PROTECT MATERIALS AND APPARATUS ADEQUATELY SHALL BE SUFFICIENT CAUSE FOR REJECTION OF ANY DAMAGED MATERIAL OR EQUIPMENT.
 - 4. CLOSE PIPE AND EQUIPMENT OPENINGS TO PREVENT INTRUSION OF OBSTRUCTIONS AND DAMAGE.
 - 5. OWNER OR ARCHITECT WILL REQUIRE REMOVAL AND REPLACEMENT OF SUCH MATERIAL OR WORK FROM THE PREMISES WHICH IS NOT IN ACCORDANCE WITH CONTRACT DOCUMENTS. REPLACE UNSATISFACTORY WORK WITHOUT DELAY, AT NO ADDITIONAL COST TO THE OWNER.
 - 6. ALL MATERIAL AND EQUIPMENT SHALL BE PROTECTED AGAINST MOISTURE, DIRT AND DAMAGE. PROTECTIVE COVERINGS SHALL BE PROVIDED FOR BEARINGS, OPEN CONNECTIONS TO PUMPS AND TANKS, COILS, DUCTS, PIPES AND SIMILAR EQUIPMENT THAT IS VULNERABLE TO GRIT AND DIRT.

7. THE INTERIOR OF THE PIPES SHALL BE KEPT CLEAN AT ALL TIMES.

PART 3 - EXECUTION

3.1 GENERAL:

- A. GENERAL ARRANGEMENT AND LOCATION OF PIPING, EQUIPMENT, ETC. ARE SHOWN ON DRAWINGS OR HEREIN SPECIFIED. CAREFULLY EXAMINE OTHER WORK THAT MAY CONFLICT WITH THIS WORK. INSTALL THIS WORK IN HARMONY WITH OTHER CRAFTS AND AT PROPER TIME TO AVOID DELAY OF WORK. PROVIDE ALL OFFSETS AS REQUIRED TO AVOID OTHER TRADES AT NO ADDITIONAL COST TO THE OWNER.
- B. IN ADVANCE OF CONSTRUCTION, WORK OUT MINOR CHANGES AND RELOCATIONS TO SUIT ACTUAL CONDITIONS AND WORK OF OTHER TRADES TO AVOID CONFLICT THEREWITH. THIS SHALL NOT BE CAUSE FOR ADDITIONAL COST.
- C. EXECUTE ANY WORK OR APPARATUS SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, OR VICE VERSA, THE SAME AS IF SPECIFICALLY MENTIONED BY BOTH. OMISSION FROM DRAWINGS OR SPECIFICATIONS OF ANY MINOR DETAILS OF CONSTRUCTION, INSTALLATION, MATERIALS, OR ESSENTIAL SPECIALTIES DOES NOT RELIEVE THIS CONTRACTOR FROM FURNISHING SAME IN PLACE COMPLETE.
- D. FURNISH AND INSTALL ANY INCIDENTAL WORK NOT SHOWN OR SPECIFIED WHICH CAN REASONABLY BE INFERRED AS PART OF THE WORK AND NECESSARY TO PROVIDE A COMPLETE AND WORKABLE SYSTEM.
 - 1. MINOR PIPING ASSOCIATED WITH INSTRUMENTATION AND CONTROL IS GENERALLY NOT SHOWN. INTERCONNECTION OF SENSORS, TRANSDUCERS, CONTROL DEVICES, INSTRUMENTATION PANELS, IS THE RESPONSIBILITY OF THE CONTRACTOR. SMALL PIPING ASSOCIATED WITH WATER COOLING, DRIPS, DRAINS AND OTHER MINOR PIPING MAY NOT BE SHOWN TO AVOID CONFUSION IN THE PLAN PRESENTATION BUT SHALL BE PROVIDED AS PART OF CONTRACT WORK. DRAINS SHALL BE PIPED TO THE NEAREST FLOOR DRAINS.
- E. FURNISH MATERIALS AND WORK AT PROPER TIME TO AVOID DELAY OF THE WORK.
- F. COORDINATE WITH TESTING AND BALANCING CONTRACTOR TO REVIEW DRAWINGS FOR PROPOSED ADDITIONAL BALANCING COMPONENTS REQUIRED FOR PROPER SYSTEM TESTING AND BALANCING.

3.2 ACCESS:

- A. CONTINUOUSLY CHECK ARCHITECTURAL DRAWINGS FOR CLEARANCE AND ACCESSIBILITY OF EQUIPMENT SPECIFIED HEREIN TO BE PLACED. NO ALLOWANCE OF ANY KIND WILL BE MADE FOR NEGLIGENCE ON PART OF CONTRACTOR TO FORESEE MEANS OF INSTALLING HIS EQUIPMENT INTO PROPER POSITION.

2.3 CLEANOUTS

- A. PROVIDE CLEANOUTS OF SAME DIAMETER AS PIPE SHALL BE INSTALLED IN ALL HORIZONTAL SOIL AND WASTE LINES WHERE INDICATED AND AT ALL POINTS OF CHANGE IN DIRECTION. CLEANOUTS SHALL BE LOCATED A MINIMUM OF 18" FROM BUILDING CONSTRUCTION SO AS TO PROVIDE SUFFICIENT SPACE FOR RODDING.
- B. CLEANOUTS SHALL HAVE CAST IRON FERRULES AND BRONZE PLUGS.
- C. CLEANOUTS EXTENDING TO FLOOR LEVEL SHALL BE PROVIDED WITH MEMBRANE FLANGE AND CLAMPING COLLAR, BRONZE RAISED HEAD PLUG, AND NONSLIP SCORIATED TOP.
- D. CLEANOUTS TO BE AS FOLLOWS:

Plumbing General Conditions

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1. CLEANOUTS IN CAST_IRON SOIL OR WASTE LINES: ZURN Z_1440A-BP.
2. CLEANOUTS IN WALLS: ZURN Z_1446-A-BP WITH STAINLESS STEEL ACCESS COVER.
3. CLEANOUTS IN FLOOR TO BE A ZURN ZN_1400 WITH THE FOLLOWING OPTIONS:
 - a. WHERE LOCATED IN TERRAZZO FLOOR, PROVIDE -T, SQUARE TOP OPTION.
 - b. WHERE LOCATED IN CARPET, PROVIDE -T SQUARE TOP OPTION AND -CM CARPET MARKER OPTION.
 - c. WHERE LOCATED IN VINYL TILE, PROVIDE -TX SQUARE TOP RECESSED FOR TILE OPTION.
- E. ACCEPTABLE MANUFACTURERS:
 1. ZURN
 2. J.R. SMITH
 3. MIFAB

PART 3 EXECUTION

3.1 INSTALLATION OF VALVES:

- A. VALVE APPLICATIONS:
 1. DOMESTIC WATER:
 - a. SHUT OFF VALVES ABOVE GRADE: BALL VALVES
- B. GENERAL:
 1. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL. VALVES STEM POSITION TO BE ARRANGED TO ALLOW ACCESS FOR MAINTENANCE.
 2. EXAMINE VALVE INTERIOR FOR CLEANLINESS, FREEDOM FROM FOREIGN MATTER, AND CORROSION. REMOVE SPECIAL PACKING MATERIALS, SUCH AS BLOCKS, USED TO PREVENT DISC MOVEMENT DURING SHIPPING AND HANDLING.
 3. OPERATE VALVES IN POSITIONS FROM FULLY OPEN TO FULLY CLOSED PRIOR TO INSTALLING WITHIN SYSTEM.
 4. INSTALL VALVES WITH UNIONS OR FLANGES AT EACH PIECE OF EQUIPMENT ARRANGED TO ALLOW SERVICE, MAINTENANCE, AND EQUIPMENT REMOVAL WITHOUT SYSTEM SHUTDOWN.
 5. LOCATE VALVES FOR EASY ACCESS AND PROVIDE SEPARATE SUPPORT WHERE NECESSARY.
 6. INSTALL VALVES IN HORIZONTAL PIPING WITH STEM AT OR ABOVE CENTER OF PIPE.

3.2 PIPE ESCUTCHEONS:

- A. INSTALL PIPE ESCUTCHEONS ON EACH PIPE PENETRATION THROUGH FLOORS, WALLS, PARTITIONS, AND CEILINGS WHERE PENETRATION IS EXPOSED TO VIEW AND ON EXTERIOR OF BUILDING.
- B. TIGHTEN ESCUTCHEON TO PIPE OR INSULATION SO ESCUTCHEON COVERS PENETRATION HOLE AND IS FLUSH WITH ADJOINING SURFACE.

3.3 CARE AND CLEANING:

- A. REPAIR OR REPLACE BROKEN, DAMAGED, OR OTHERWISE DEFECTIVE PARTS, MATERIALS, AND WORK.
- B. AT COMPLETION OF WORK, CAREFULLY CLEAN AND ADJUST EQUIPMENT AND TRIM INSTALLED AS PART OF THIS WORK.
- C. LEAVE SYSTEMS AND EQUIPMENT IN SATISFACTORY OPERATING CONDITION.

3.4 OPERATION TEST:

- A. TEST EACH PIECE OF EQUIPMENT TO SHOW THAT IT WILL OPERATE IN ACCORDANCE WITH INDICATED REQUIREMENTS

END OF SECTION 22 00 00

SECTION 22 11 00
FACILITY WATER DISTRIBUTION

PART 1 - GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES PLUMBING ACCESSORIES INCLUDING THE FOLLOWING:

1. VALVES AND ACCESSORIES
2. MISCELLANEOUS PIPING PRODUCTS
3. CLEANOUTS

1.2 REFERENCES AND STANDARDS

A. REQUIREMENTS OF REGULATORY AGENCIES: CONTRACTOR TO CONFORM TO THE PUBLICATIONS LISTED BELOW. REQUIREMENTS OF THESE PUBLICATIONS ARE TO BE CONSIDERED AS A MINIMUM STANDARD. IF DETAILS AND SPECIFICATIONS WHICH REQUIRE MORE STRINGENT WORK ARE INDICATED WITHIN PROJECT, CONTRACTOR TO PROVIDE THE MORE STRINGENT.

1. CALIFORNIA PLUMBING CODE (CPC) COMPLIANCE: COMPLY WITH APPLICABLE PORTIONS OF THE CALIFORNIA PLUMBING CODE PERTAINING TO SELECTION AND INSTALLATION OF PLUMBING MATERIALS AND PRODUCTS. FABRICATE AND INSTALL NATURAL GAS SYSTEMS IN ACCORDANCE WITH CPC.

2. ASME B31.9 FOR BUILDING SERVICES PIPING VALVES.

3. NSF COMPLIANCE: NSF 61 FOR VALVE MATERIALS FOR POTABLE-WATER SERVICE

B. ALL PLUMBING COMPONENTS INTENDED TO DISPENSE WATER FOR HUMAN CONSUMPTION SHALL COMPLY WITH REQUIREMENTS OF CALIFORNIA ASSEMBLY BILL AB1953. COMPONENTS TO INCLUDE (BUT NOT LIMITED TO): PIPING, FAUCETS, ANGLE STOPS, VALVES, BUBBLERS, DRINKING FOUNTAINS, PIPING, ETC.

1.3 ACTION SUBMITTALS

A. PRODUCT DATA: SUBMIT COMPLETE DATA OF MATERIALS PROPOSED INCLUDING:

1. MANUFACTURER AND MODEL NUMBER
2. CLEARLY INDICATE ALL OPTIONS, TRIM, AND ACCESSORIES.
3. CROSS REFERENCE MANUFACTURER'S CUT SHEET TO FIXTURE CALLOUT ID ON SUBMITTAL SHEET.

B. NAMED NON-BASIS-OF-DESIGN MANUFACTURER DOES NOT GUARANTEE APPROVAL OF EQUIPMENT SUBMITTALS. MANUFACTURERS MUST COMPLY WITH ALL THE PERFORMANCE AND FEATURES AS SPECIFIED WITHIN THE SPECIFICATIONS AND AS INDICATED ON THE DESIGN DOCUMENTS.

1.4 CLOSEOUT SUBMITTALS

A. WARRANTY: SUBMIT EXECUTED WARRANTY.

B. CERTIFICATION: SUBMIT CONTRACTORS CERTIFICATION

C. OPERATION AND MAINTENANCE DATA: SUBMIT COMPLETE O&M DATA INCLUDING:

1. MAINTENANCE DATA AND PARTS LISTS FOR EACH COMPONENT.
2. PROVIDE "TROUBLE_ SHOOTING" MAINTENANCE GUIDE
3. INCLUDE THIS DATA WITHIN MAINTENANCE MANUAL

D. PROVIDE VALVE LIST AND HALF SIZE FLOORPLAN(S) SHOWING VALVE LOCATIONS AND FUNCTION AND VALVE ID CROSS-REFERENCED ON FLOORPLAN.

1.5 QUALITY ASSURANCE

A. MANUFACTURER'S QUALIFICATIONS: FIRMS REGULARLY ENGAGED IN MANUFACTURER OF PLUMBING PIPING SYSTEMS PRODUCTS, OF TYPES, MATERIALS, AND SIZES REQUIRED WHOSE PRODUCTS HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR NOT LESS THAN 5 YEARS.

B. CONTRACTOR'S QUALIFICATIONS: FIRM WITH AT LEAST 5 YEARS OF SUCCESSFUL INSTALLATION EXPERIENCE ON PROJECTS WITH PIPING

SYSTEMS WORK SIMILAR TO THAT REQUIRED OF PROJECT.

1.6 WARRANTY

A. MANUFACTURER: IN ADDITION TO THE CONTRACTOR'S STANDARD GUARANTEE, FURNISH OWNER WITH MANUFACTURER'S WARRANTY FOR ALL PLUMBING VALVES AND ACCESSORIES AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP. WARRANTY SHALL COVER REPLACEMENT OF ALL SUCH VALVES OR ACCESSORIES PLUS LABOR TO INSTALL.

PART 2 - PRODUCTS

2.1 VALVES

A. GENERAL:

1. BRONZE VALVES SHALL BE MADE WITH DEZINCIFICATION-RESISTANT MATERIALS. BRONZE VALVES MADE WITH COPPER ALLOY (BRASS) CONTAINING MORE THAN 15 PERCENT ZINC ARE NOT PERMITTED.
2. BRONZE VALVES: 2"Ø AND SMALLER WITH THREADED ENDS, UNLESS OTHERWISE INDICATED.
3. VALVE SIZES: SAME AS UPSTREAM PIPING UNLESS OTHERWISE INDICATED.
4. VALVE-END CONNECTIONS:

B. ACCEPTABLE MANUFACTURERS:

1. BALL, GATE, BUTTERFLY, AND CHECK VALVES:

- a. NIBCO
- b. APOLLO
- c. MILWAUKEE

C. BALL VALVES - < 3"Ø:

1. TWO-PIECE, FULL-PORT, LEAD FREE BRONZE BALL VALVES WITH STAINLESS-STEEL TRIM:
2. NIBCO MODEL 585-66-LF OR EQUAL.
 - a. PRESSURE RATING: 600 PSI NON-SHOCK COLD WORKING

PRESSURE

- b. MAXIMUM PRESSURE / TEMPERATURE: 100 PSI AT 300OF
- c. BODY DESIGN: TWO PIECE STEEL WITH THREADED BODY
PACKNUT DESIGN (NO THREADED STEM DESIGNS ALLOWED)
WITH ADJUSTABLE STEM PACKING.
- d. BODY MATERIAL: SILICON BRONZE ASTM B 584 ALLOY C87600.
- e. ENDS: THREADED OR SOLDER.
- f. SEATS: PTFE OR TFE.
- g. STEM: STAINLESS.
- h. BALL: STAINLESS STEEL, VENTED.
- i. PORT: FULL.

2.2 MISCELLANEOUS PIPING PRODUCTS

A. WATER HAMMER ARRESTORS

- 1. WATER HAMMER ARRESTORS TO BE PROVIDED ON BOTH HOT AND COLD WATER BRANCH PIPING SEVERING ALL PLUMBING FIXTURES (NOT JUST FLUSH VALVES).
- 2. PROVIDE WATER BRANCH LINES AT SINGLE FIXTURES WITH A MANUFACTURED WATER HAMMER ARRESTOR. WATER HAMMER ARRESTORS SHALL BE SIZED PER PLUMBING DRAINAGE INSTITUTE STANDARD PDI-WH201 "WATER HAMMER ARRESTORS."
- 3. WATER HAMMER ARRESTOR TO BE WITH NESTING TYPE BELLOWS CONTAINED WITHIN A CASING HAVING SUFFICIENT DISPLACEMENT VOLUME TO DISSIPATE THE CALCULATED KINETIC ENERGY GENERATED IN PIPING SYSTEM. BOTH CASING AND BELLOWS CONSTRUCTED OF TYPE 304 STAINLESS STEEL. ARRESTOR TO HAVE A THREADED CONNECTION.
- 4. WHERE MULTIPLE FIXTURES ARE LOCATED IN A ROW OR BATTERY A SINGLE OR MULTIPLE WATER HAMMER ARRESTORS, AS REQUIRED, MAY BE USED. MULTIPLE FIXTURE INSTALLATIONS SHALL HAVE THE ARRESTOR SIZED AND LOCATED PER STANDARD PDI-WH201 AND

THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

a. PROVIDE ACCESS DOOR FOR WATER HAMMER ARRESTORS IN RESTROOMS CONTAINING MORE THAN 1 FLUSH VALVE TYPE FIXTURE.

5. ALL WATER HAMMER ARRESTORS SHALL HAVE MALE PIPE THREAD CONNECTIONS.

6. WATER HAMMER ARRESTOR TO BE A ZURN MODEL Z1700 OR EQUAL.

7. ACCEPTABLE MANUFACTURERS:

a. ZURN

b. J.R. SMITH

c. WADE

d. AMTROL INC

B. PIPING ESCUTCHEONS:

1. PROVIDE CHROME PLATED BRASS PIPE ESCUTCHEONS WITH INSIDE DIAMETER CLOSELY FITTING PIPE OUTSIDE DIAMETER OR OUTSIDE OF PIPE INSULATION WHERE PIPE IS INSULATED.

2. SELECT OUTSIDE DIAMETER OF ESCUTCHEON TO COMPLETELY COVER PIPE PENETRATION HOLE IN FLOORS, WALLS, CEILINGS, OR PIPE SLEEVE EXTENSION, IF ANY.

3. FURNISH PIPE ESCUTCHEONS WITH NICKEL OR CHROME FINISH AND SCREW OR SPRING CLAMPING DEVICE WITH CONCEALED HINGE

2.3 CLEANOUTS

A. PROVIDE CLEANOUTS OF SAME DIAMETER AS PIPE SHALL BE INSTALLED IN ALL HORIZONTAL SOIL AND WASTE LINES WHERE INDICATED AND AT ALL POINTS OF CHANGE IN DIRECTION. CLEANOUTS SHALL BE LOCATED A MINIMUM OF 18" FROM BUILDING CONSTRUCTION SO AS TO PROVIDE SUFFICIENT SPACE FOR RODDING.

B. CLEANOUTS SHALL HAVE CAST IRON FERRULES AND BRONZE PLUGS.

C. CLEANOUTS EXTENDING TO FLOOR LEVEL SHALL BE PROVIDED WITH MEMBRANE FLANGE AND CLAMPING COLLAR, BRONZE RAISED HEAD

PLUG, AND NONSLIP SCORIATED TOP.

D. CLEANOUTS TO BE AS FOLLOWS:

1. CLEANOUTS IN CAST_IRON SOIL OR WASTE LINES: ZURN Z_1440A-BP.
2. CLEANOUTS IN WALLS: ZURN Z_1446-A-BP WITH STAINLESS STEEL ACCESS COVER.
3. CLEANOUTS IN FLOOR TO BE A ZURN ZN_1400 WITH THE FOLLOWING OPTIONS:
 - a. WHERE LOCATED IN TERRAZZO FLOOR, PROVIDE -T, SQUARE TOP OPTION.
 - b. WHERE LOCATED IN CARPET, PROVIDE -T SQUARE TOP OPTION AND -CM CARPET MARKER OPTION.
 - c. WHERE LOCATED IN VINYL TILE, PROVIDE -TX SQUARE TOP RECESSED FOR TILE OPTION.

E. ACCEPTABLE MANUFACTURERS:

1. ZURN
2. J.R. SMITH
3. MIFAB

PART 3 EXECUTION

3.1 INSTALLATION OF VALVES:

A. VALVE APPLICATIONS:

1. DOMESTIC WATER:

- a. SHUT OFF VALVES ABOVE GRADE: BALL VALVES

B. GENERAL:

1. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL. VALVES STEM POSITION TO BE ARRANGED TO ALLOW ACCESS FOR MAINTENANCE.
2. EXAMINE VALVE INTERIOR FOR CLEANLINESS, FREEDOM FROM FOREIGN MATTER, AND CORROSION. REMOVE SPECIAL PACKING MATERIALS, SUCH AS BLOCKS, USED TO PREVENT DISC MOVEMENT

DURING SHIPPING AND HANDLING.

3. OPERATE VALVES IN POSITIONS FROM FULLY OPEN TO FULLY CLOSED PRIOR TO INSTALLING WITHIN SYSTEM.

4. INSTALL VALVES WITH UNIONS OR FLANGES AT EACH PIECE OF EQUIPMENT ARRANGED TO ALLOW SERVICE, MAINTENANCE, AND EQUIPMENT REMOVAL WITHOUT SYSTEM SHUTDOWN.

5. LOCATE VALVES FOR EASY ACCESS AND PROVIDE SEPARATE SUPPORT WHERE NECESSARY.

6. INSTALL VALVES IN HORIZONTAL PIPING WITH STEM AT OR ABOVE CENTER OF PIPE.

3.2 PIPE ESCUTCHEONS:

A. INSTALL PIPE ESCUTCHEONS ON EACH PIPE PENETRATION THROUGH FLOORS, WALLS, PARTITIONS, AND CEILINGS WHERE PENETRATION IS EXPOSED TO VIEW AND ON EXTERIOR OF BUILDING.

B. TIGHTEN ESCUTCHEON TO PIPE OR INSULATION SO ESCUTCHEON COVERS PENETRATION HOLE AND IS FLUSH WITH ADJOINING SURFACE.

3.3 CARE AND CLEANING:

A. REPAIR OR REPLACE BROKEN, DAMAGED, OR OTHERWISE DEFECTIVE PARTS, MATERIALS, AND WORK.

B. AT COMPLETION OF WORK, CAREFULLY CLEAN AND ADJUST EQUIPMENT AND TRIM INSTALLED AS PART OF THIS WORK.

C. LEAVE SYSTEMS AND EQUIPMENT IN SATISFACTORY OPERATING CONDITION.

3.4 OPERATION TEST:

A. TEST EACH PIECE OF EQUIPMENT TO SHOW THAT IT WILL OPERATE IN ACCORDANCE WITH INDICATED REQUIREMENT

END OF SECTION 22 11 00

22 13 00

FACILITY SANITARY SEWAGE

PART 1 - GENERAL

1.1 SUMMARY

A. THIS SECTION INCLUDES PIPING REQUIRED FOR THE SANITARY SEWAGE SYSTEM.

1.2 REFERENCES AND STANDARDS

A. REQUIREMENTS OF REGULATORY AGENCIES: CONTRACTOR TO CONFORM TO THE PUBLICATIONS LISTED BELOW. REQUIREMENTS OF THESE PUBLICATIONS ARE TO BE CONSIDERED AS A MINIMUM STANDARD. IF DETAILS AND SPECIFICATIONS WHICH REQUIRE MORE STRINGENT WORK ARE INDICATED WITHIN PROJECT, CONTRACTOR TO PROVIDE THE MORE STRINGENT.

1. CALIFORNIA PLUMBING CODE (CPC) COMPLIANCE: COMPLY WITH APPLICABLE PORTIONS OF THE CALIFORNIA PLUMBING CODE PERTAINING TO SELECTION AND INSTALLATION OF PLUMBING MATERIALS AND PRODUCTS.

1.3 ACTION SUBMITTALS

A. SUBMIT MANUFACTURER'S CATALOG CUT SHEETS, SPECIFICATIONS, INSTALLATION INSTRUCTIONS, AND DIMENSIONED DRAWINGS FOR EACH TYPE OF PIPE, SUPPORT, ANCHOR, AND SEAL INDICATED WITHIN THIS SECTION THAT IS APPLICABLE TO THE PROJECT. CLEARLY INDICATE ITEM BEING SUBMITTED.

1. INDICATE PIPE SCHEDULES, PRESSURE CLASSES, ETC.

2. INDICATE ALL OPTIONS BEING SUBMITTED

1.4 CLOSEOUT SUBMITTALS

A. WARRANTY: SUBMIT EXECUTED WARRANTY.

B. CERTIFICATION: SUBMIT CONTRACTORS CERTIFICATION

1.5 QUALITY ASSURANCE

A. MANUFACTURER'S QUALIFICATIONS: FIRMS REGULARLY ENGAGED IN MANUFACTURER OF PLUMBING PIPING SYSTEMS PRODUCTS, OF TYPES, MATERIALS,

AND SIZES REQUIRED WHOSE PRODUCTS HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR NOT LESS THAN 5 YEARS.

B. CONTRACTOR'S QUALIFICATIONS: FIRM WITH AT LEAST 5 YEARS OF SUCCESSFUL INSTALLATION EXPERIENCE ON PROJECTS WITH PIPING SYSTEMS WORK SIMILAR TO THAT REQUIRED OF PROJECT

1.6 WARRANTY

A. MANUFACTURER: IN ADDITION TO THE CONTRACTOR'S STANDARD GUARANTEE, FURNISH OWNER WITH MANUFACTURER'S WARRANTY FOR ALL SANITARY SEWAGE PIPING AND ACCESSORIES AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP. WARRANTY SHALL COVER REPLACEMENT OF ALL SUCH PIPING SYSTEMS OR ACCESSORIES PLUS LABOR TO INSTALL.

PART 2 - GENERAL

2.1 GENERAL:

A. PROVIDE PIPING MATERIALS AND FACTORY FABRICATED PIPING PRODUCTS OF SIZES, TYPES, PRESSURE AND TEMPERATURE RATINGS, AND CAPACITIES AS INDICATED. MATERIALS AND PRODUCTS TO COMPLY WITH THE CALIFORNIA PLUMBING CODE.

B. WHERE MORE THAN ONE TYPE OF MATERIAL IS INDICATED, SELECTION IS THE CONTRACTORS OPTION.

1. CONTRACTOR TO PROVIDE SUBMITTAL INFORMATION ON MATERIAL WHICH IS TO BE INSTALLED.

2. WHERE MORE THAN ONE MATERIAL IS INDICATED, THE CONTRACTOR SHALL ONLY INSTALL ONE MATERIAL PER SYSTEM AND MATERIALS SHALL NOT BE MIXED WITHIN THE SAME SYSTEM.

C. SOLDERING MATERIALS: JOINTS IN COPPER TUBING FOR ALL INSTALLATIONS SHALL BE MADE WITH BRAZING ALLOY SIL_FOS, OR EQUAL. CLEAN SURFACES TO BE JOINTED SHALL BE FREE OF OIL, GREASE, RUST, AND OXIDES.

1. HARRIS STAY_SAFE 50 SOLDER, OR EQUAL, MAY BE PERMITTED ON PLUMBING LINES ABOVE SLAB OR GROUND ONLY WITH PRIOR REVIEW FOR PIPING SIZES 2 INCHES AND SMALLER ONLY. SOLDERS USED SHALL CONTAIN NO LEAD.

2.2 PIPING AND FITTINGS:

A. SANITARY SEWER PIPING:

1. CAST IRON, NO-HUB SOIL PIPE. PROVIDE WITH NEOPRENE SLEEVE GASKETS AND STAINLESS STEEL 4 BAND COUPLINGS.

2. CAST IRON HUB AND SPIGOT SOIL PIPE AND FITTINGS: CISPI STANDARD 301 (LATEST EDITION) AND ASTM A 74.

3. SANITARY SEWER COUPLINGS TO BE SUPER-DUTY TYPE IN CONFORMANCE WITH FACTORY MUTUAL STANDARD 1680, CLASS I AND/OR ASTM C 1540.

a. COUPLINGS TO BE AS FOLLOWS: "HUSKY" SD4000, ORANGE SHIELD COUPLING AS MANUFACTURED BY HUSKY TECHNOLOGIES, OR EQUAL. MINIMUM SHIELD THICKNESS TO BE 0.015".

b. NO-HUB CAST-IRON SOIL PIPE COUPLINGS: COUPLINGS FOR USE IN CONNECTION WITH NO-HUB CAST IRON SOIL PIPE AND FITTINGS SHALL COMPLY WITH CISPI 310. SHIELD AND CLAMP ASSEMBLY SHALL CONSIST OF A 300 SERIES STAINLESS STEEL CORRUGATED SHIELD, STAINLESS STEEL BANDS (4-BANDS MINIMUM), AND SEALING SLEEVE IN CONFORMANCE WITH ASTM C564.

4. AT CONTRACTOR'S OPTION, TYPE DWV HARD DRAWN COPPER TUBING WITH CAST BRONZE SOLDER JOINT FITTINGS AND LEAD FREE SOLDER MAY BE USED ABOVE GROUND IN LIEU OF CAST IRON DRAINAGE

FITTINGS. PROVIDE TEST TEES AS SPECIFIED.

5. ACCEPTABLE MANUFACTURER'S: TYLER PIPE, AB&I, OR EQUAL

B. SANITARY VENT PIPING:

1. CAST IRON SOIL PIPE AND FITTINGS AS SPECIFIED FOR SANITARY SEWER PIPING.

2. AT CONTRACTOR'S OPTION, TYPE DWV HARD DRAWN COPPER TUBING WITH CAST BRONZE SOLDER JOINT FITTINGS AND LEAD-FREE SOLDER MAY BE USED ABOVE GROUND IN LIEU OF CAST IRON DRAINAGE FITTINGS. PROVIDE TEST TEES AS SPECIFIED.

PART 3 - EXECUTION

3.1 GENERAL

A. EXAMINE AREAS AND CONDITIONS UNDER WHICH PLUMBING PIPING SYSTEMS ARE TO BE INSTALLED. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO CONTRACTOR.

B. INSTALL PIPES AND PIPE FITTINGS IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES WHICH WILL ACHIEVE PERMANENTLY LEAK-PROOF PIPING SYSTEMS, CAPABLE OF PERFORMING EACH INDICATED SERVICE WITHOUT PIPING FAILURE. INSTALL EACH RUN WITH MINIMUM JOINTS AND COUPLINGS BUT WITH ADEQUATE AND ACCESSIBLE UNIONS FOR DISASSEMBLY AND MAINTENANCE/REPLACEMENT OF VALVES AND EQUIPMENT. REDUCE SIZES WHERE INDICATED BY USE OF REDUCING FITTINGS. ALIGN PIPING ACCURATELY AT CONNECTIONS, WITHIN 1/16_INCH MISALIGNMENT TOLERANCE.

C. LOCATE PIPING RUNS, UNLESS DETAILED OTHERWISE, VERTICALLY AND HORIZONTALLY (PITCHED TO DRAIN). INSTALL PIPING PARALLEL AND PERPENDICULAR TO ADJACENT BUILDING WALLS/STRUCTURE AND AVOID DIAGONAL RUNS WHEREVER POSSIBLE. ORIENT HORIZONTAL RUNS PARALLEL WITH WALLS AND COLUMN LINES. LOCATE RUNS AS SHOWN OR DESCRIBED BY DIAGRAMS, DETAILS AND NOTATIONS. HOLD PIPING CLOSE TO WALLS, OVERHEAD CONSTRUCTION, COLUMNS, AND OTHER STRUCTURAL AND PERMANENT_ENCLOSURE ELEMENTS OF BUILDING; LIMIT CLEARANCE TO 1/2_INCH WHERE FURRING IS SHOWN FOR ENCLOSURE OR CONCEALMENT OF PIPING; LOCATE INSULATED PIPING FOR 1" CLEARANCE OUTSIDE INSULATION. WHEREVER POSSIBLE IN FINISHED AND OCCUPIED SPACES, CONCEAL PIPING FROM VIEW BY LOCATING IN COLUMN ENCLOSURES, IN HOLLOW WALL CONSTRUCTION, OR ABOVE SUSPENDED CEILINGS; DO NOT ENCASE HORIZONTAL RUNS IN SOLID PARTITIONS, EXCEPT AS INDICATED.

D. ELECTRICAL EQUIPMENT SPACES: DO NOT RUN PIPING THROUGH TRANSFORMER VAULTS, ELEVATOR EQUIPMENT ROOMS, DATA CLOSETS OR OTHER ELECTRICAL OR ELECTRONIC EQUIPMENT SPACES OR ENCLOSURES.

E. SHOULD STRUCTURAL DIFFICULTIES OR WORK OF OTHER CONTRACTORS PREVENT THE RUNNING OF PIPES OR THE SETTING OF EQUIPMENT AT THE POINTS SHOWN, CONTRACTOR TO MAKE THE NECESSARY DEVIATIONS TO THE PIPING SYSTEM, AS DETERMINED BY THE CONTRACTOR, WITH THE ARCHITECT'S REVIEW, WITHOUT ADDITIONAL COST TO OWNER.

F. INSPECT EACH PIECE OF PIPE AND EACH FITTING TO SEE THAT THERE IS NO DEFECTIVE WORKMANSHIP ON PIPE OR OBSTRUCTIONS IN PIPES AND FITTINGS.

3.2 INSTALLATION OF SANITARY DRAINAGE SYSTEMS:

A. MAKE JOINTS BETWEEN PVC PIPE AND CAST-IRON PIPE OR FITTINGS USING CAST IRON ADAPTER FITTINGS, INSTALLED AS RECOMMENDED BY THE MANUFACTURER.

B. SEWER PIPING: RUN ALL HORIZONTAL SANITARY DRAIN PIPING INSIDE OF BUILDING ON A UNIFORM GRADE OF NOT LESS THAN 1/4_INCH PER FOOT, UNLESS OTHERWISE NOTED ON THE PLANS. PIPING SHALL HAVE INVERT ELEVATIONS AS SHOWN AND SLOPE UNIFORMLY BETWEEN GIVEN ELEVATIONS.

C. RUN ALL DRAINAGE PIPING AS STRAIGHT AS POSSIBLE AND PROVIDE EASY BENDS WITH LONG TURNS; MAKE ALL OFFSETS AT AN ANGLE OF 45 DEGREES OR LESS.

D. GRADE ALL VENT PIPING SO AS TO FREE ITSELF QUICKLY OF ANY WATER CONDENSATION.

E. HUBLESS CAST_IRON JOINTS: COMPLY WITH COUPLING MANUFACTURER'S INSTALLATION INSTRUCTIONS AND IN ACCORDANCE WITH CISPI PAMPHLET NO. 310, LATEST EDITION.

F. CLEANOUTS: INSTALL IN PIPING AS INDICATED, AS REQUIRED BY CALIFORNIA PLUMBING CODE, AT EACH CHANGE IN DIRECTION OF PIPING GREATER THAN 45 DEGREES, AT MINIMUM INTERVALS OF 50 FEET FOR PIPING 4 INCHES AND SMALLER AND 100 FEET FOR LARGER PIPING, AND AT BASE OF EACH CONDUCTOR.

G. FLASHING FLANGES: INSTALL FLASHING FLANGE AND CLAMPING DEVICE WITH EACH CLEANOUT PASSING THROUGH WATERPROOF MEMBRANE.

H. INSTALL DRAINS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND IN LOCATIONS INDICATED. UNLESS DETAILED OTHERWISE, INSTALL FLOOR DRAINS AND FLOOR SINKS WITH LIP OF DRAIN SLIGHTLY BELOW FINISHED FLOOR TO ENSURE DRAINAGE. COORDINATE WITH OTHER CONTRACTORS TO ENSURE THAT FLOOR SLOPES TO DRAIN.

3.3 TEST OF PIPING:

A. TEST PIPING AT COMPLETION OF ROUGHING IN, IN ACCORDANCE WITH THE FOLLOWING SCHEDULE. SHOW NO LOSS IN PRESSURE OR VISIBLE LEAKS AFTER A MINIMUM DURATION OF 4 HOURS AT THE TEST PRESSURES INDICATED. TESTS TO BE VERIFIED BY INSPECTOR OF RECORD.

1. TEST NEW WASTE AND VENT PIPING WITH WATER. FILL WITH WATER TO TOP OF HIGHEST VENT.

B. TESTING EQUIPMENT, MATERIALS, AND LABOR SHALL BE FURNISHED BY THIS CONTRACTOR.

C. REPAIR PIPING SYSTEMS SECTIONS WHICH FAIL REQUIRED PIPING TEST, BY DISASSEMBLY AND

REINSTALLATION, USING NEW MATERIALS TO EXTENT REQUIRED TO OVERCOME LEAKAGE. DO NOT USE CHEMICALS, STOP_LEAK COMPOUNDS, MASTICS, OR OTHER TEMPORARY REPAIR METHODS.

D. DRAIN TEST WATER FROM PIPING SYSTEMS AFTER TESTING AND REPAIR WORK HAS BEEN COMPLETED

3.4 CLEANING UP:

A. UPON COMPLETION OF WORK REMOVE MATERIALS, EQUIPMENT, APPARATUS, TOOLS, AND THE LIKE, AND LEAVE PREMISES CLEAN, NEAT, AND ORDERLY.

END OF SECTION 22 13 00

SECTION 22 42 00
PLUMBING FIXTURES AND TRIM

1.1 SUMMARY

A. THIS SUBMITTAL SECTION DESCRIBES PLUMBING FIXTURES AND TRIM.

1.2 REFERENCES AND STANDARDS

A. PLUMBING FIXTURE STANDARDS: COMPLY WITH APPLICABLE PORTIONS OF THE FOLLOWING CODES AND REQUIREMENTS FOR ALL WORK IN THIS SECTION:

1. CALIFORNIA PLUMBING CODE - CPC
2. AMERICAN NATIONAL STANDARDS INSTITUTE - ANSI
3. FEDERAL STANDARDS _ F.S.

B. ALL PLUMBING COMPONENTS WITHIN THE WATERWAYS SHALL COMPLY WITH THE SAFE DRINKING WATER ACT (SDWA) "NO-LEAD" RESTRICTIONS OF ANSI/NSF STANDARD 61 SECTION 9.

C. ALL PLUMBING COMPONENTS INTENDED TO DISPENSE WATER FOR HUMAN CONSUMPTION SHALL COMPLY WITH REQUIREMENTS OF CALIFORNIA ASSEMBLY BILL AB1953. COMPONENTS TO INCLUDE (BUT NOT LIMITED TO): PIPING, FAUCETS, ANGLE STOPS, VALVES, BUBBLERS, DRINKING FOUNTAINS, PIPING, ETC.

1.3 ACTION SUBMITTALS

A. PRODUCT DATA: SUBMIT COMPLETE DATA OF MATERIALS PROPOSED INCLUDING:

1. MANUFACTURER AND MODEL NUMBER
2. CLEARLY INDICATE ALL OPTIONS, TRIM, AND ACCESSORIES.
3. CROSS REFERENCE MANUFACTURER'S CUT SHEET TO FIXTURE CALLOUT ID ON SUBMITTAL SHEET.

1.4 CLOSEOUT SUBMITTALS

A. OPERATION AND MAINTENANCE DATA: SUBMIT COMPLETE O&M DATA INCLUDING:

1. MAINTENANCE DATA AND PARTS LISTS FOR EACH TYPE OF FIXTURE.
2. PROVIDE "TROUBLE_ SHOOTING" MAINTENANCE GUIDE
3. INCLUDE THIS DATA WITHIN MAINTENANCE MANUAL

1.5 WARRANTY

A. MANUFACTURER: IN ADDITION TO THE CONTRACTOR'S STANDARD GUARANTEE, FURNISH OWNER WITH MANUFACTURER'S WARRANTY FOR ALL PLUMBING VALVES AND ACCESSORIES AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP. WARRANTY SHALL COVER REPLACEMENT OF ALL SUCH VALVES OR ACCESSORIES PLUS LABOR TO INSTALL.

PART 2 - PRODUCTS

2.1 GENERAL

A. ALL FIXTURES SHALL BE FIRST CLASS IN EVERY RESPECT. ACCURATELY LINE UP FINISHED PLUMBING. TAKE SPECIAL CARE WITH THE ROUGHING_ IN AND FINISHED PLUMBING WHERE BATTERIES OF FIXTURES OCCUR.

B. CONSULT ARCHITECTURAL DRAWINGS, AS WELL AS PLUMBING DRAWINGS, FOR LOCATIONS, DIMENSIONS AND MOUNTING HEIGHT OF PLUMBING FIXTURES.

1. TAKE LOCATION AND MOUNTING HEIGHTS FOR ROUGHING_ IN FROM ARCHITECTURAL DRAWINGS.

C. FOLLOW PLUMBING FIXTURE ROUGH-IN SCHEDULE ON DRAWINGS FOR ROUGHING_ IN CONNECTIONS. SET ROUGHING_ IN FOR ALL FIXTURES EXACTLY AS PER MEASUREMENTS FURNISHED BY THE MANUFACTURERS OF THE

FIXTURES USED.

D. ROUGHING_IN FOR SINKS SHALL BE BROUGHT IN THROUGH THE WALL UNDER THE CENTERLINE OF THE DRAIN FROM THE FIXTURE WHEREVER POSSIBLE AND AS CLOSE TO THE FIXTURE AS POSSIBLE.

E. PROVIDE ALL WATER SUPPLIES TO FIXTURES WITH COMPRESSION SHUT_OFF STOPS. STOPS TO BE AS FOLLOWS:

1. IPS INLETS WITH THREADED BRASS NIPPLES AT PIPE CONNECTION

2. LOCK SHIELD_LOOSE KEY.

3. LEAD FREE

4. PROVIDE COMBINATION FIXTURES WITH COMPRESSION STOP ON EACH WATER SUPPLY FITTING.

a. PROVIDE LOOSE KEY HANDLE FOR EACH STOP.

F. PROVIDE 1/2 INCH RIGID RISERS FOR ALL FIXTURES, UNLESS OTHERWISE NOTED. RIGID RISERS TO BE CHROME PLATED COPPER TUB WITH BRASS COMPRESSION NUTS.

G. UNLESS NOTED OTHERWISE, ALL FINISH FOR EXPOSED METAL TRIM ON FIXTURE SHALL BE POLISHED CHROMIUM PLATED.

1. THIS ALSO APPLIES TO WALL FLANGES, NUTS, AND WASHERS.

2. TRIM EXPOSED UNDER SINKS SHALL BE CONSIDERED EXPOSED AND TO BE CHROMIUM PLATED.

H. MAKE CONNECTION BETWEEN FIXTURES AND FLANGES ON SOIL PIPE GASTIGHT AND WATERTIGHT WITH NEOPRENE_TYPE GASKETS (WALL_HUNG FIXTURES).

1. RUBBER GASKETS OR PUTTY WILL NOT BE PERMITTED.

I. P-TRAPS

1. PROVIDE FIXTURES NOT HAVING INTEGRAL TRAPS WITH CHROMIUM PLATED P-TRAP CONNECTED TO CONCEALED WASTE WITHIN WALL AND SANITARY FITTINGS. TRAP TO BE

- 17 GAUGE TUBULAR BRASS
- 2. PROVIDE ADA FIXTURES WASTE OFFSETS.
- 3. ACCEPTABLE MANUFACTURERS: MCGUIRE
MANUFACTURING, DEARBORN BRASS, OR EQUAL
- J. UNIONS ON WASTE PIPES ON FIXTURE SIDE OF TRAPS MAY BE
SLIP OR FLANGE JOINTS WITH SOFT RUBBER OR LEAD GASKETS.

2.2 PLUMBING FIXTURE HANGERS AND SUPPORTS

- A. INSTALL AND SUPPORT PLUMBING FIXTURES AS REQUIRED AND
SPECIFIED HEREIN.
- B. CARRIERS AND SUPPORTS
 - 1. PROVIDE AS RECOMMENDED BY FIXTURE MANUFACTURER
FOR THE PARTICULAR INSTALLATION AND TYPE OF FIXTURE
BEING INSTALLED.
 - 2. RESIDENTIAL_TYPE FIXTURE SUPPORTS ARE NOT
ACCEPTABLE.
 - 3. INSTALL WALL_HUNG SINKS IN STUD WALLS WITH
CONCEALED ARMS AND FLOOR SUPPORT, WITH FEET OF
SUPPORT SECURELY ANCHORED TO FLOOR.
 - a. IN ADDITION, ANCHOR TOP OF SUPPORT TO WALL
CONSTRUCTION IN AN APPROVED MANNER.
 - 4. ACCEPTABLE MANUFACTURERS: ZURN, J.R. SMITH, OR
WADE

2.3 PLUMBING FIXTURES

- A. FIXTURES TO BE AS SCHEDULED ON DRAWINGS.
- B. PROVIDE STOPS FOR ALL CONCEALED SUPPLIES.
- C. WHERE NOTED, INSULATE DOMESTIC HOT WATER, COLD
WATER, AND WASTE PIPING BELOW ADA PLUMBING FIXTURES
WITH PROVIDE ADA SINKS AND LAVATORIES WITH PROTECTIVE
COVERS "TRUEBRO" LAV GUARD PROTECTIVE PIPE COVERS.

PROTECTIVE COVERS TO BE:

1. MOLDED CLOSED CELL VINYL PIPE COVERS,
2. HAVE VANDAL RESISTANT SNAP-CLIP FASTENERS
3. ASTM E-84 SMOKE TEST RATING OF 0.
- D. SIMILAR FIXTURES TO BE BY SAME MANUFACTURER.
- E. ACCEPTABLE MANUFACTURERS TO BE AS FOLLOWS:
 1. WALL MOUNTED SINKS: KOHLER, AMERICAN STANDARD, OR EQUAL
 2. FAUCETS: CHICAGO OR EQUAL
 3. STAINLESS STEEL SINKS: JUST OR EQUAL

PART 3 - EXECUTION

3.1 INSPECTION AND PREPARATION

A. EXAMINE ROUGHING_IN WORK OF DOMESTIC WATER AND WASTE PIPING SYSTEMS TO VERIFY ACTUAL LOCATIONS OF PIPING CONNECTIONS PRIOR TO INSTALLING FIXTURES. ALSO EXAMINE FLOORS, SUBSTRATES, AND CONDITIONS UNDER WHICH FIXTURE WORK IS TO BE ACCOMPLISHED. CORRECT ANY INCORRECT LOCATIONS OF PIPING AND OTHER UNSATISFACTORY CONDITIONS FOR INSTALLATION OF PLUMBING FIXTURES. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.2 INSTALLATION

A. INSTALL PLUMBING FIXTURES OF TYPES INDICATED WHERE SHOWN AND AT MOUNTING HEIGHT INDICATED ON ARCHITECTURAL DRAWINGS IN ACCORDANCE WITH FIXTURE MANUFACTURER'S WRITTEN INSTRUCTIONS, ROUGHING_IN DRAWINGS, AND WITH RECOGNIZED INDUSTRY PRACTICES. ENSURE THAT PLUMBING FIXTURES COMPLY WITH REQUIREMENTS AND SERVE INTENDED PURPOSES. COMPLY

WITH APPLICABLE REQUIREMENTS OF THE UNIFORM PLUMBING CODE PERTAINING TO INSTALLATION OF PLUMBING FIXTURES.

B. IN ALL CASES WHERE PLUMBING FIXTURES ARE MOUNTED ON OR AGAINST BUILDING WALLS OF CONCRETE OR OTHER MATERIALS HAVING RELATIVELY ROUGH OR NON_PLANAR SURFACES, IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO PROVIDE ANY NECESSARY GROUT OR BACKING MATERIALS REQUIRED TO FACILITATE FIXTURE MOUNTING AND ELIMINATE VOID SPACES BETWEEN FIXTURES AND WALL TO ENSURE ADEQUATE BEARING CONTACT.

C. ON COMPLETION OF INSTALLATION, PROVIDE SILICONE SEALER AT ALL POINTS OF FIXTURE CONTACT WITH WALLS OR FLOORS.

D. ANY FIXTURE BROKEN, CRACKED, OR OTHERWISE DAMAGED DURING INSTALLATION MUST BE REPLACED BY CONTRACTOR AT HIS OWN EXPENSE.

3.3 TRAPPING AND VENTING OF FIXTURES

A. TRAP AND VENT ALL PLUMBING FIXTURES IN ACCORDANCE WITH UNIFORM PLUMBING CODE ADOPTED BY THE WESTERN PLUMBING OFFICIALS ASSOCIATION AND LOCAL PLUMBING CODES, WHETHER OR NOT SHOWN ON DRAWINGS. STRICTLY ADHERE TO ANY LOCAL CODES. ONLY EXCEPTIONS TO ABOVE WILL BE THOSE FIXTURES WHICH ARE SPECIALLY NOTED HEREIN OR ON DRAWINGS TO BE PROVIDED WITH SPECIAL WASTES.

B. NO VENT SHALL INTERSECT ANOTHER VENT AT A POINT LESS THAN 6" ABOVE EXTREME OVERFLOW LEVEL OF HIGHEST FIXTURE SERVED.

C. TAKE VENTS OFF TOP HALF OF HORIZONTAL RUNS AND GRADE SO AS TO FREE VENTS QUICKLY OF ANY WATER OR CONDENSATION.

3.4 ADJUSTMENT OF PLUMBING PIPING SYSTEM

A. TEST AND ADJUST FIXTURES SO THAT EACH FIXTURE RECEIVES THE PROPER AMOUNT OF WATER.

1. ADJUST FLUSH VALVES SO THAT EACH FIXTURE RECEIVES THE PROPER AMOUNT OF WATER.

2. REGULATE ALL FAUCETS, DRINKING FOUNTAINS, ETC. TO THE APPROVAL OF THE ARCHITECT SO THAT THE ENTIRE SYSTEM IS LEFT IN FIRST_CLASS CONDITION.

3. ADJUST ALL SLOW-OFF VALVES TO TURN OFF BETWEEN 12-15 SECONDS.

4. ADJUST SENSITIVITY OF SENSOR FAUCETS TO THE SATISFACTION OF THE OWNER.

3.5 CLEAN AND PROTECT

A. CLEAN PLUMBING FIXTURES OF DIRT AND DEBRIS UPON COMPLETION OF INSTALLATION.

B. PROTECT INSTALLED FIXTURES FROM DAMAGE DURING THE REMAINDER OF THE CONSTRUCTION PERIOD.

C. CLEAN FIXTURES, EQUIPMENT, AND MATERIALS INSTALLED UNDER THIS CONTRACT. REMOVE CEMENT, PLASTER, PAINT AND/OR RUST, ETC. ALSO REMOVE ALL MANUFACTURERS' STICKERS.

1. DIRT, RUBBISH, PAINT SPOTS, OR GREASE ON WALLS OR FIXTURES FOR WHICH THIS CONTRACTOR IS RESPONSIBLE MUST BE REMOVED BY HIM.

D. FIXTURES TO NOT BE USED BY CONTRACTORS DURING CONSTRUCTION.

3.6 FIELD QUALITY CONTROL

A. UPON COMPLETION OF INSTALLATION OF PLUMBING FIXTURES AND AFTER UNITS ARE WATER PRESSURIZED, TEST FIXTURES TO DEMONSTRATE CAPABILITY AND COMPLIANCE WITH REQUIREMENTS.

1. WHEN POSSIBLE, CORRECT MALFUNCTIONING UNITS AT SITE, THEN RETEST TO DEMONSTRATE COMPLIANCE; OTHERWISE, REMOVE AND REPLACE WITH NEW UNITS AND PROCEED WITH RETESTING.

B. INSPECT EACH INSTALLED UNIT FOR DAMAGE TO FINISH. IF DAMAGED, CRACKED, OR DENTED, REMOVE FIXTURE AND REPLACE WITH NEW UNIT.

3.7 OPERATION TEST

A. TEST EACH PIECE OF EQUIPMENT TO SHOW THAT IT WILL OPERATE IN ACCORDANCE WITH INDICATED REQUIREMENTS.

3.8 EXTRA STOCK

A. FURNISH SPECIAL WRENCHES AND OTHER DEVICES NECESSARY FOR SERVICING PLUMBING FIXTURES AND TRIM TO OWNER WITH RECEIPT. FURNISH ONE DEVICE FOR EVERY 10 UNITS.

3.10CLEANING UP

A. AFTER INSTALLATION AND TESTING BUT PRIOR TO ACCEPTANCE, CONTRACTOR TO CLEAN FIXTURES WITH MILD DETERGENT AND WATER SOLUTION, RINSE WITH CLEAN WATER, AND WIPE DRY.

B. UPON COMPLETION OF WORK REMOVE MATERIALS, EQUIPMENT, APPARATUS, TOOLS, AND THE LIKE, AND LEAVE PREMISES CLEAN, NEAT, AND ORDERLY

END OF SECTION 22 42 00

**SECTION 31 10 00
CLEARING AND GRUBBING**

PART 1 - CLEARING AND GRUBBING

1.01 SECTION INCLUDES

- A. Description
- B. General
- C. Clearing and Grubbing
- D. Scalping
- E. Disposal
- F. Measurement and Payment

1.02 RELATED SECTIONS

- A. Section 31-3000 – Site Preparation

1.03 REFERENCES

- A. CSS – CALTRANS STANDARD SPECIFICATIONS
 - 1. Section 10 & 18 Dust Control
 - 2. Section 16, Clearing and Grubbing
 - 3. Section 17, Watering

1.04 DESCRIPTION

- A. This work shall consist of clearing, grubbing, scalping, removal of trees and stumps, asphalt concrete, and removing and disposing of all vegetation and debris within the established limits of construction, except such objects that are to remain or are to be removed in accordance with other sections of these specifications.

1.05 GENERAL

- A. The Engineer shall exercise control over clearing and grubbing and shall designate all trees, shrubs plants, and other objects that shall remain. This work shall also include the preservation from injury or defacement of all vegetation and objects to remain. Cut or scraped surfaces of trees or shrubs selected for retention, shall be treated with an asphaltum paint or other measures to insure the survival of the retained tree or shrub.
- B. The Contractor shall contact the Construction Manager prior to commencing clearing and grubbing operations to verify that the objects to remain have been clearly and properly marked.

1.06 CLEARING AND GRUBBING

- A. All surface objects, brush, roots, snags, trees, stumps, shrubs, rubbish and other protruding obstructions, not designated to remain, shall be cleared and/or grubbed, including mowing, as required.

- B. Except in areas to be excavated, stump holes and other holes from which obstructions are removed shall be backfilled with suitable material and compacted in accordance with Section 316000 Trenching, Backfill, and Compaction.
- C. All roots and root clusters that have a diameter of 1 inch or larger shall be grubbed out to a depth of at least 2 feet below subgrade for structures, concreted or paved areas, and one foot below embankment areas.

1.07 SCALPING

- A. The Contractor shall scalp areas where excavation or embankment is to be made, except that areas need not be scalped where embankment to be constructed is four (4) feet or more in height to subgrade elevation. Scalping shall include the removal of material such as roots, sod, grass, residue of agricultural crops, saw dust, and decayed vegetable matter from the surface of the ground.

1.08 DISPOSAL

- A. All materials cleared, grubbed or scalped from the designated areas shall be removed from the site, and disposed of at locations where it is Legal to dispose of such material. The Contractor is responsible for complying with all local, State and Federal regulations in regard with the disposal and transportation of refuse material from the site. The Contractor is responsible for all fees that may result from the disposal at locations away from the site.

1.09 MEASUREMENT AND PAYMENT

- A. Payment for Clearing, Grubbing, and Scalping is made at a lump sum price. Such payment shall constitute full compensation for all labor, equipment, tools, fees, and all other items necessary and incidental to the completion of work.

END OF SECTION 31 10 00

**SECTION 31 20 00
EARTHWORK GENERAL PROVISIONS**

PART 1 -- GENERAL

1.01 SECTION INCLUDES

- A. Construction Standards and Specifications.
- B. Authorized Agents of the client.
- C. Construction Survey Requirements.
- D. Required Permits.

1.02 RELATED SECTIONS

- A. Section 31-3000, Site Preparation
- B. Section 31-4000, Excavation

1.03 REFERENCES

- A. Geotechnical Investigation, Dated
- B. CSS – Caltrans Standard Specifications
 - 1. Section 10 & 16, Dust Control
 - 2. Section 17, Watering
 - 3. Section 19, Earthwork.
 - 4. Section 21, Erosion Control
 - 5. Section 24-29, Subbases and Bases
- C. UCS - Marin County Uniform Construction Standards

1.01 GENERAL

- A. The execution of this contract shall be in accordance with the 2010 Standard Specifications of the State of California, Department of Transportation, herein after referred to as “Caltrans Standard Specifications”; City of San Rafael Public Works Standards; and in accordance with any other parts, provisions, requirements, and conditions in this document. Said Caltrans Standard Specifications and City of San Rafael Public Works Standards shall operate in full force and effect as if completely set forth herein.
- B. In case of conflict between the Caltrans Standard Specifications and the Specifications and General Provisions as set forth in this document, the Specifications and General Provisions as set forth in this document shall take precedence over and be used in-lieu of such conflicting provisions.
- C. When in the Caltrans Standard Specifications or in any documents or instruments where the Caltrans Standard Specifications govern, and the following terms or nouns are used, the intent and meaning shall be interpreted as follows:

Department of Transportation: The San Rafael City Elementary School District

Director: The San Rafael City Elementary School District

Caltrans: The San Rafael City Elementary School District

Engineer and/or Architect: The principle client acting either directly or through properly authorized agents, such agents acting within the scope of the particular duties entrusted to them.

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

State: The San Rafael City Elementary School District

Department of Transportation Building, Sacramento: The San Rafael City Elementary School District

PART 2 -- CONSTRUCTION SURVEYING

2.01 GENERAL

- A. The Contractor shall provide all construction surveying, staking and layout required to build the Improvements per the construction plans, project specifications, complete in place and as directed by the Engineer.
- B. The Project Surveyor will be required to provide daily survey notes and cut sheets to the Engineer during the progress of this construction project and all construction staking and surveying shall be approved by the Engineer prior to the start of construction.
- C. All surveys provided in this section must be accurate to within 0.01 feet, minimum, unless otherwise noted on the project plans.
- D. Following Architect's review of verification survey, rework as required to obtain specified grades.

PART 3 -- PERMITS

3.01 STORM WATER QUALITY CONTROLS

Regulatory Requirements

The Contractor shall be responsible for complying with the requirements of the State Water Resources Control Board Construction General Permit Order 2022-0057-DWR. Construction activities are regulated under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity (General Permit). The Contractor shall be fully responsible for following BMPs as described in the State of California's Water Resources Control Board Website, www.swrcb.ca.gov.

END OF SECTION 31 20 00

SECTION 31 30 00
SITE PREPARATION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Site Grading.
- B. Dust Control.
- C. Watering.
- D. Imported Fill and Engineered Fill.

1.02 RELATED SECTIONS

- A. Section 31-2000 – Earth Work General Provisions
- B. Section 31-4000 – Excavation

1.03 REFERENCES

- A. CSS – CALTRANS STANDARD SPECIFICATIONS
 - 1. Section 10 & 18, Dust Control
 - 2. Section 16, Clearing and grubbing
 - 3. Section 17, Watering
 - 4. Section 19, Earthwork

1.04 SITE GRADING

- A. General: Uniformly grade areas within specified limits, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.
- B. Outside Building Lines: Grade areas adjacent to building lines to drain away from structures and to prevent ponding.
- C. Finished surfaces free from irregular surface changes as follows:
 - 1. Landscaped Areas: Landscaped areas to be graded to within not more than 1/10-foot above or below finished grade elevations.
 - 2. Walks: Shape surface of areas under walks to line, grade and cross-section, with finished surface not more than 1/10-foot above or below required finished grade elevation.
 - 3. Pavements: Shape surface of areas under pavement to line, grade and cross-section, with finished surface not more than 1/10-foot above or below required finished grade elevation.
- D. Fill: Grade smooth and even, free of voids, compacted as specified, and to the required elevation. Provide subgrade-finished surface with not more than 1/10-foot above or below required elevation.
- E. Compaction: After grading, compact subgrade surfaces to the depth and specified percentage of maximum or relative density.

1.05 DUST CONTROL

- A. Contractor shall be responsible for and shall provide pollution and dust abatement and control measures satisfactory to the Engineer, continuously during the course of the Work.

1.06 WATERING

- A. All equipment used for applying water shall be supplied by the Contractor and shall be equipped with a positive means of shutoff. The Contractor shall make available at the site, one mobile unit, of at least 1,000 gallons capacity, for applying water, upon reasonable notice to by the Engineer.
- B. Water for compacting backfill material, base, and for dust control shall be applied by means of pressure-type distributors.

1.07 IMPORTED ENGINEERED FILL

- A. Imported engineered fill shall be placed in the locations and to the depths specified by the Geotechnical Engineer and as detailed in the project plans. All material shall require advance approval of the Geotechnical engineer prior to use.

1.08 IMPORTED FILL

- A. Imported non-engineered fill shall require advance approval of the Geotechnical engineer prior to use.

1.09 EXCESS MATERIAL

- A. Remove unsuitable materials and debris from the site and dispose of it in a legal manner. Location of disposal site and length of the haul shall be the Contractor's responsibility. Excess clean soil shall be stockpiled onsite at the designated location. Stockpile shall be compacted to 80% density with a uniform top and side slopes flatter than 4 to 1. Stockpile height shall not be greater than 4 feet from the adjacent grades.

END OF SECTION 31 30 00

SECTION 31 40 00
EXCAVATION

PART 1 - EXCAVATION

1.01 SECTION INCLUDES

- A. Excavation.
- B. Backfill.
- C. Compaction.

1.02 RELATED SECTIONS

- A. Section 31-2000 – Earthwork General Provisions
- B. Section 31-3000 – Site Preparation

1.03 REFERENCES

- A. CSS – CALTRANS STANDARD SPECIFICATIONS
 - 1. Section 10 & 18, Dust Control.
 - 2. Section 16 Clearing and Grubbing.
 - 3. Section 17, Watering.
 - 4. Section 19, Earthwork.
- B. California Division of Safety and Health Construction Safety Orders
 - 1. Section 1504, Definitions
 - 2. Section 1539 through 1547

1.04 EXCAVATION

- A. Excavation is unclassified and includes excavation to subgrade elevations indicated, regardless of character of materials and obstructions encountered.
- B. Unauthorized Excavation: Consists of removal of materials beyond indicated subgrade elevations or dimensions without direction of Soils Engineer, or the Construction Manager. Unauthorized excavation shall be at the Contractor's expense.
 - 1. Under footings, foundation bases, or retaining walls:

Fill unauthorized excavations by extending bottom elevation of footing or base to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position, when acceptable to Soils Engineer.
 - 2. Elsewhere:

Backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by Soils Engineer.
- C. Additional Excavation: When excavation has reached required subgrade elevations, notify the Soils Engineer.

1. If unsuitable bearing materials are encountered at required subgrade elevations, as identified by the Soils Engineer, carry excavations deeper and replace excavated material as directed by Soils Engineer.
 2. Removal of unsuitable material and its replacement as directed will be paid on basis of contract conditions relative to changes in work.
- C. Excavation Stability: All excavations shall conform to the Construction Safety Orders contained in the excavation and shoring requirements of the California Division of Occupational Safety and Health Sections 1504 and 1539 through 1547.
- D. Dewatering: Prevent surface water and subsurface or groundwater from flowing into excavations and from flooding project site and surrounding area.
1. Do not allow water to accumulate in excavations. Dewater to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.
 2. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rain water and water removed from excavations to collection or run-off areas. Do not use trench excavations as temporary drainage ditches.
- E. Material Storage: Stockpile satisfactory excavated materials where agreed to or as directed by the Construction Manager, until required for backfill or fill. Place, grade, shape and protect stockpiles for proper drainage.
1. Locate and retain soil materials away from edge of excavations. Do not store within drip line of trees indicated to remain.
 2. Dispose of excess soil material and waste materials as specified.
- F. Excavation for Structures: Conform to elevations and dimensions as shown, and extend a sufficient distance from footings and foundations to permit placing and removal of concrete form work, installation of services, other construction, and for inspection.
1. Take care not to disturb bottom of excavation. Excavate by hand to final grade just before concrete reinforcement is placed. Trim bottoms to required lines and grades as shown in the plans.
- G. Excavation for Pavements: Cut surface under pavements to comply with cross-sections, elevations and grades as shown in the plans.
- H. Excavation in earth beyond the specified lines and grades shall be corrected by filling the resulting voids with approved, compacted earth fill. The exception to this is that if the excavation is to become the subgrade for riprap, rockfill, sand or gravel bedding, or drainfill, the voids may be filled with the material conforming to the specifications, with no increase in item quantity to be paid.

1.05 BORROW EXCAVATION

- A. When the quantities of suitable material obtained from specified excavations are insufficient to construct the specified earth fills and earth backfills, additional material shall be obtained from the designated borrow areas. The extent and depth of borrow pits within the limits of the designated borrow areas shall be as approved by the engineer.
- B. Borrow pits shall be excavated and finally dressed to blend with the existing topography and sloped to prevent ponding and to provide drainage.
- C. The finally dressed borrow pit areas shall be hydro-seeded, and provisions made to initialize the growth of the hydro-seeding at the beginning of the subsequent rainy season.

1.06 BACKFILLING

- A. General: Place acceptable backfill material in layers to the required subgrade elevations, for each area classification listed below.
 - 1. In excavations, landscaped areas, and non-structural sections, use Imported Engineer fill materials as specified in these specifications.
 - 2. Under building slabs, under walks and pavements use imported select fill materials specified in these specifications.
- B. Placement and Compaction: Place backfill and fill materials in layers not more than 8-inches in loose depth for material compacted by heavy compaction equipment, and not more than 8-inches in loose depth for material compacted by hand-operated tampers.
 - 1. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
 - 2. Place backfill and fill materials to required elevations. Prevent wedging action of backfill against structures or displacement of piping or conduit by placing material to approximately same elevation in each lift.

1.07 COMPACTION

- A. General: Control soil compaction during construction providing minimum percentage of density specified for each area classification indicated.
- B. Percentage of Maximum Density Requirements: Compact to the following percentages of maximum density, determined in accordance with ASTM D1557.

Any area of the sub-grade determined by the Soils Engineer to be unstable, as evidenced by excessive deflection under the movement of equipment, or for any other reason shall be brought to satisfactory stability by additional rolling, re-working, or removal and replacement of unsuitable material, as directed by the Soils Engineer.

1. General fill, within upper 30 inches of fill, Compact to 90% Relative Compaction.
 2. The fill under the sidewalks shall be compacted to a Relative Compaction of 95%
 3. The fill under any driving surface such as parking lots, driveways, etc. shall be compacted to a Relative Compaction of 95%
- C. Moisture Control: Where soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material; prevent free water appearing on surface during or subsequent to compaction.
1. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
 2. The moisture content of soils at time of compaction shall not vary more than 2-percent above or below optimum moisture content

1.08 EXPORT

- A. All materials removed from the property shall be disposed of at a legally approved site, for the specific materials, and all removals shall be in accordance with all Federal, State, and local regulations.

END OF SECTION 31 40 00

SECTION 31 60 00
TRENCHING, BACKFILL, AND COMPACTION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The work of this Section includes all earthwork required for construction of additions to the authorized agencies property. Such earthwork shall include, but not be limited to the loosening, removing, loading, transporting, depositing, and compacting in its final location of all materials wet and dry, as required for the purposes of completing the Work specified in the Contract Documents. The Work shall also include the supporting of structures and utilities above and below the ground. All backfilling around structures and utilities and all backfilling of trenches and pits. The disposal of excess excavated materials; borrow of materials to make up deficiencies for fills; and all other incidental earthwork, all in accordance with the requirements of the Contract Documents.

1.02 SECTION INCLUDES

- A. Contractors Submittals.
B. Quality Assurance.
C. Suitable Fill and Backfill Requirements.
D. Execution of Trenching, Backfill, and Compaction.

1.03 RELATED SECTIONS

- A. Section 31-2000, Earthwork General Provisions
B. Section 33-2000, Storm Drainage

1.04 REFERENCES

1. CSS- 2015 Caltrans Standard Specifications
 2. Section 17, Watering
 3. Section 18, Dust
 4. Section 19, Earthwork
 5. Section 21, Erosion Control
 6. Section 61, Culvert and Drainage Pipe Joints
 7. Section 62, Alternative Culverts
 8. Section 64, Plastic Pipe
 9. Section 65, Reinforced Concrete Pipe
- A. California Division of Safety and Health Construction Safety Orders
1. Section 1504, Definitions
 2. Section 1539 through 1547
- B. The following references are part of this section. The latest editions of the following references shall be used:
- | | |
|------------|---|
| ASTM C136 | Method for Sieve Analysis of Fine and Coarse Aggregates. |
| ASTM D422 | Method for Particle-Size Analysis of Soils. |
| ASTM D1556 | Test Method for Density of Soil in Place by the Sand-Cone Method. |
| ASTM D1557 | Test methods for Moisture-Density Relations of Soils and Soil-Aggregate |

	Mixtures Using 10-lb (4.54-kg) Rammer and 18-in. (457-mm) Drop.
ASTM D1633	Test Method for Compressive Strength of Molded Soil-Cement Cylinders.
ASTM D2419	Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
ASTM D2487	Classification of Soils for Engineering Purposes
ASTM D2844	Resistance R-Value and Expansion Pressure of Compacted Soils.
ASTM D2901	Test Method for Cement Content of Freshly-mixed Soil-Cement.
ASTM D2922	Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
ASTM D3744	Aggregate Durability Index.
ASTM D4253	Test Methods for Maximum Index Density of Soils Using a Vibratory Table.
ASTM D4254	Test Methods for Minimum Index Density of Soils and Calculation of Relative Density.
UBC 18-2	Expansion Index Test

1.05 CONTRACTOR SUBMITTALS

- A. The CONTRACTOR's attention is directed to the provisions of the California Code of Regulations, Title 8 "Industrial Relations", DIVISION 1, Chapter 4, Subchapter 4 "Construction Safety Orders", Article 6 "Excavations"; and Section 6705 of the California Labor code. In accordance with these requirements the CONTRACTOR shall submit for ENGINEER's review a detailed plan of the provisions to be made for worker protection from the hazard of caving ground during excavation. The detailed plan shall include the name of the CONTRACTOR's "competent person", who shall be responsible for the safety of all persons entering excavations made under this Contract. Also included in the detailed plan shall be reference to the provisions of the Construction Safety Orders, and how the CONTRACTOR's shoring plan meets the requirements of said document.
- B. The CONTRACTOR shall inform the ENGINEER in writing if the designated "competent person" is to change during the Contract Period. The name and title of the replacement shall be provided.

1.06 QUALITY ASSURANCE

- A. General: It shall be the responsibility of the CONTRACTOR to accomplish the specified compaction for backfill or other earthwork. All testing, re-testing, and related inspection tests, other than compliance testing performed by the governing agency, shall be contract work with all costs borne by the CONTRACTOR.
- B. Where soil material is required to be compacted to a percentage of maximum density, the maximum density at optimum moisture content shall be determined in accordance with ASTM D1557. Where cohesionless, free draining soil material is required to be compacted to a percentage of relative density, the calculation of relative density shall be determined in accordance with ASTM D4253 and D4254. Field density in-place tests shall be performed in accordance with ASTM D1556, ASTM D2922, or by such other means acceptable to the ENGINEER.
- C. In case the tests of the fill or backfill show non-compliance with the required density, the CONTRACTOR shall accomplish such remedy as may be required to ensure compliance. Subsequent testing to show compliance shall be by a testing laboratory selected by the AUTHORIZED AGENT of the Owner and shall be at the CONTRACTOR's expense.
- D. Particle size analysis of soils and aggregates shall be performed using ASTM D422.

- E. Determination of sand equivalent value shall be performed using ASTM D2419.
- F. The determination of durability index shall be made using ASTM D3744.
- G. The determination of the resistance (R-Value) shall be made using ASTM D2844 or California Test Method No. 31, State of California, Department of Transportation.

PART 2 PRODUCTS

2.01 SUITABLE FILL AND BACKFILL MATERIAL REQUIREMENTS

- A. General. Fill and backfill materials shall be suitable selected or processed clean, fine earth, rock, or sand, free from grass, roots, brush, or other vegetation, and with a maximum particle size of 4 inches.
- B. Fill and backfill materials to be placed within 6 inches of any structure shall be free of rocks or unbroken masses of earth materials having a maximum dimension larger than 2 inches.
- C. Fill and backfill materials to be placed within 12 inches of a pipe or conduit shall be as specified on the plans.
- D. Suitable materials may be obtained from onsite excavations, may be processed from onsite materials, or may be imported. If imported materials are required to meet the requirements of this Section or to meet the quantity requirements of the project, then the CONTRACTOR shall provide the imported materials at no additional expense to the AUTHORIZED AGENT of the Owner. The CONTRACTOR shall designate the proposed import sources in advance and shall provide representative source samples to be tested prior to acceptance and use.

2.02 SUITABLE MATERIALS

- A. Non-Engineered Fill
 - 1. Native soils, excluding topsoil and fill soil may be acceptable as non-engineered fill.
 - 2. Native soils must be free of organics, clean of deleterious materials, and evaluated as to their engineering properties (e.g., expansion potential and strength) by a qualified geotechnical engineer prior to acceptance for use during actual earthwork.
- B. Imported Fill
 - 1. Import fill shall be free of organic and artificial debris, and meet the specifications.
 - 2. The CONTRACTOR shall designate the proposed import source in advance and provide source samples to be tested prior to acceptance and use.
- C. Aggregate Base and Subbase.
 - 1. Class 2 Aggregate Base shall be as specified in Caltrans standard Specifications, Section 26-1.02A, 3/4 inch maximum.
 - 2. Class 2 Aggregate Subbase shall be as specified Caltrans Standard Specifications, Section 25-1.02A class 2.

D. Pipe Bedding Material.

1. Coarse pipe bedding shall be Class 2 Aggregate Base per Paragraph C. 1.
2. Bedding material for poly-wrapped DIP pipe shall be sand as defined below.

E. Sand Backfill.

1. Sand backfill shall be free of organics and other deleterious materials.
2. Sand backfill shall meet the following gradation requirements:

<u>Sieve Size</u>	<u>Percent Passing</u>
No. 4	90-100
No. 200	0-5

F. Coarse Bedding

1. Coarse Bedding shall consist of clean, durable, crushed (i.e., angular) aggregate, uniformly graded within the gradation requirements below.

<u>Sieve Size</u>	<u>Percent Passing</u>
2-inch	100
1 ½ -inch	90-100
¾ - inch	5-30
⅜ - inch	0-5
No. 200	0-2

G. Geotextile Fabric.

1. Any geotextile fabric should be non-woven consisting of polymeric filaments formed into a stable network. The fabric should be inert to commonly encountered chemicals, rot-proof and resistant to ultra-violet light exposures, insects, and rodents. All fabric shall be submitted to the AUTHORIZED AGENT of the Owner for approval prior to any use.

2.03 UNSUITABLE MATERIAL

- A. Unsuitable soils for fill material shall include, but not be limited to, all soils which, when classified under ASTM D2487, fall in the classifications of Pt, OH, CH, MH, or OL.
- B. In addition, any soil which cannot be compacted sufficiently to achieve the percentage of maximum density specified for the intended use, shall be classed as unsuitable material.

2.04 USE OF FILL AND BACKFILL MATERIAL TYPES

- A. The CONTRACTOR shall use the types of materials as designated herein for all required fill and backfill hereunder.
- B. Where these Specifications conflict with the requirements of any local agency having jurisdiction, or with the requirements of a material manufacturer, the ENGINEER shall be immediately notified. In case of conflict therewith, the CONTRACTOR shall use the most stringent requirement, as determined by the ENGINEER.
- C. Fill and backfill types shall be used in accordance with the following provisions:

TRENCHING, BACKFILL, AND COMPACTION

1. Pipe zone backfill, as defined under “Pipe and Utility Trench Backfill” herein, shall consist of Pipe Bedding material.
2. Trench zone backfill for pipelines as defined under “Pipe and Utility Trench Backfill” shall be Aggregate Base material.
3. Final backfill material for pipelines under paved areas, as defined under “Pipe and Utility Trench Backfill” shall be Aggregate base material up to the pavement base. Pavement base and pavement material shall be as defined in Section 32-3000, Hot Mix Asphalt. Final backfill under areas not paved shall be the same material as that used for trench backfill, except that top soil material shall be used for final 8 inches of backfill in landscape areas unless otherwise shown or specified.
4. Trench backfill and final backfill for pipelines under structures shall be the same material as used in the pipe zone, except where concrete encasement is required by the Contract Documents.
5. Aggregate base materials under pavements shall be Aggregate Base material constructed to the thicknesses shown or specified.
6. Backfill around structures shall be Class 2 Aggregate Base material or imported engineered fill.
7. Backfill used to replace pipeline trench over-excavation shall be a layer of Coarse Bedding material wrapped in filter fabric to prevent migration of fines for wet conditions.
8. Backfill used in areas of over-excavation, areas where excavation bottoms are disturbed, or areas where the excavation bottom is or becomes unstable shall be coarse bedding wrapped in geotextile fabric.

PART 3 EXECUTION

3.01 Pavement Subgrade

- A. All areas to be under pavements and concrete flatwork (e.g., roadway, sidewalks), or which will otherwise receive engineered fill should be stripped of organics (e.g., topsoil), tree or shrubbery roots, existing fill, and any other man-made materials.
- B. The top 6-inches of subgrade soils beneath pavement areas shall be compacted to a minimum relative compaction of 95 percent of maximum dry density by ASTM D1557.
- C. The surface of the subgrade after compaction shall be hard, uniform, smooth, and true to grade and cross-section. Subgrade shall not vary more than 0.05 foot from specified grade and cross-section.

3.02 STRUCTURE AND ROADWAY

- A. General.
 1. The CONTRACTOR shall submit a trenching plan for review before any trench excavation commences. Trenches in areas of pedestrian or vehicular traffic shall be open the minimum time necessary to complete the work, but shall not exceed 4 days maximum before backfilling trench. Except when specifically provided to the contrary, excavation shall include the removal of all materials of whatever nature encountered, including all obstructions of any nature that would

interfere with the proper execution and completion of the Work. The removal of said materials shall conform to the lines and grades shown or ordered. Unless otherwise provided, the entire construction site shall be stripped of all vegetation and debris, and such material shall be removed from the site prior to performing any excavation or placing any fill. Excavations shall be sloped or otherwise supported in a safe manner in accordance with applicable State safety requirements and the requirements of OSHA Safety and Health Standards for Construction (29CFR1926).

2. Except where otherwise specified, indicated on the Drawings, or accepted in writing by the ENGINEER, the maximum length of open trench, as defined in this paragraph and below, where the construction is in any stage of completion, shall not exceed the linear footages as set forth in the following. The definition of "open trench" for the purposes of this description will include excavation, pipe laying, backfilling, and temporary pavement replacement. Any excavated areas shall be considered as "open trench" until all temporary pavement has been placed or until trenches outside of pavement replacement areas have been backfilled and compacted in accordance with these Contract Documents. Trenches across streets shall be completely backfilled with temporary or permanent pavement in place as soon as possible after pipe laying.

- B. Excavation Beneath Paved Areas. Excavation under areas to be paved shall extend to the bottom of the aggregate base, if such base is called for; or as otherwise called out in the specifications, otherwise it shall extend to the paving thickness. After the required excavation has been completed, the exposed surface shall be scarified, worked and compacted to obtain the Relative Compaction required for the area as stated on the plans or the specifications.
- C. Steel Plates. Steel plates of 1-inch minimum thickness with adequate trench bracing shall be used to bridge across trenches at streets and driveways and where trench backfill and temporary patch have not been completed during regular working hours. Safe and convenient passage for pedestrians shall be provided. The ENGINEER may designate a passage to be provided at any point deemed necessary. Access to fire stations, fire hydrant, and hospitals shall be maintained at all times. Comply with latest Caltrans requirements.
- D. Stockpiling of excavated material overnight along the trench in business, commercial, or residential areas will not be allowed.

3.03 PIPELINE AND UTILITY TRENCH EXCAVATION

- A. General. Unless otherwise shown or ordered, excavation for pipelines and utilities shall be vertical trenches.
- B. Excavation and backfill shall conform to the provisions in Section 19-3, Caltrans Standard Specifications. Backfill around waterlines protected with polyethylene wrap shall be in accordance with the manufacture's recommendations and shall be fine sand material placed to a minimum of twelve inches above top of pipe. All backfill material shall be approved by the Engineer.
- C. Trenches may be excavated either by hand, or by machine; and excavation shall begin at the outlet end and proceed upgrade. Trenches shall be in accordance to the California Division of Safety and Health Construction Safety Orders.
- D. Trench Bottom: The bottom of the trench shall be excavated uniformly. Where bell and spigot pipe is used, excavation shall accommodate bell. The trench bottom shall be given a final trim, using a laser to set the string line for establishing grade, such that each pipe section when first laid will be continually

in contact with the ground along the extreme bottom of the pipe. Rounding out the trench to form a cradle for the pipe will not be required.

- E. Open Trench: The maximum lengths of open trench permitted in any one location shall be 500 feet, or the length necessary to accommodate the amount of pipe installed in a single day, whichever is greater. All trench excavations shall be fully backfilled at the end of each day or, in lieu thereof, shall be covered by heavy steel plates adequately braced and capable of supporting vehicular traffic. In those locations where it is impractical to either backfill or install steel plates at the end of the day, the CONTRACTOR shall submit a non-working -hour traffic control and barricade plan in accordance with OSHA regulations.
- F. Trench Over-Excavation: Where the Drawings indicate that trenches shall be over-excavated, they shall be excavated to the depth shown, and then backfilled with coarse bedding material wrapped in geotextile fabric to the grade of the bottom of the bedding.
- G. Over-Excavation: When ordered by the ENGINEER, where indicated on the Drawings or not, trenches shall be over-excavated beyond the depth shown. Such over-excavation shall be to the depth ordered. The trench shall then be backfilled to the grade of the bottom of the bedding. All work specified in this Section shall be performed by the CONTRACTOR at his cost when the over-excavation ordered by the ENGINEER is less than 6 inches below the limits shown. When the over-excavation ordered by the ENGINEER is 6 inches or greater below the limits shown, additional payment will be made to the CONTRACTOR for that portion of the Work which is located below said 6-inch distance. Said additional payment will be made under separate unit price bid items for over-excavation and bedding if such bid items have been established; otherwise payment will be made in accordance with a negotiated price.
- H. Where a trench has been excavated below the designed grade, the bottom of the trench shall be refilled with approved material, well compacted in place in an approved manner and to the satisfaction of the Geotechnical Consultant. This shall be done at no additional cost to the Owner.
- I. Where pipelines are to be installed in embankment or structure fills, the fill shall be constructed to a level at least one foot above the top of the pipe before the trench is excavated.
- J. The Owner shall have the right to limit the amount of trench that is opened or partially opened at any one time; and also to limit the amount of trench left without backfill, at any one time.

3.04 OVER-EXCAVATION NOT ORDERED, SPECIFIED, OR SHOWN

- A. If the bottom of the excavation is found to consist of soft or unstable material which is incapable of properly supporting the pipe, the ENGINEER shall be advised immediately. At the ENGINEER's direction, such material shall be removed to the depth and for the lengths specified and the trench refilled to grade with coarse bedding material wrapped in geotextile fabric.
- B. The CONTRACTOR shall obtain the ENGINEER's written approval prior to over-excavating. Any over-excavating without such approval shall be at the CONTRACTOR's expense. The quantity of approved unsuitable material excavated and its replacement with coarse bedding material wrapped in geotextile fabric shall be paid for as extra work.
- C. Where the Contractor, in excavating trenches, exceeds the widths specified above, he shall furnish at his own expense, higher strength pipe, or other methods of construction as approved by the Engineer, to adequately provide for the increased loading, which the trench widening will cause.

3.05 EXCAVATION IN VICINITY OF TREES

- A. Except where trees are shown to be removed, trees shall be protected from injury during construction operations. No tree roots over 2 inches in diameter shall be cut without express permission of the Owner. Trees shall be supported during excavation by any means previously reviewed by the ENGINEER. Provide temporary fencing around trees.

3.06 DISPOSAL OF EXCESS EXCAVATED MATERIAL

- A. The CONTRACTOR shall remove and stockpile all excess excavated material.

3.07 BACKFILL - GENERAL

- A. Backfill shall not be dropped directly upon any structure or pipe. Backfill shall not be placed around or upon any structure until the concrete has attained sufficient strength to withstand the loads imposed. Backfill around water retaining structures shall not be placed until the structures have been tested, and the structures shall be full of water while backfill is being placed.
- B. Except for coarse bedding materials being placed in over-excavated areas or trenches, backfill shall be placed after all water is removed from the excavation.

3.08 PLACING AND SPREADING OF BACKFILL MATERIALS

- A. Backfill materials shall be placed and spread evenly in layers, loose depth 6 inches or less.
- B. During spreading, each layer shall be thoroughly mixed as necessary to promote uniformity of material in each layer. Pipe zone backfill materials shall be manually spread around the pipe so that when compacted, the pipe zone backfill will provide uniform bearing and side support.
- C. Where the backfill material moisture content is too low to permit the specified degree of compaction, water shall be added before or during spreading until the proper moisture content is achieved. Jetting will not be permitted for compaction.
- D. Where the backfill material moisture content is too high to permit the specified degree of compaction, the material shall be dried until the moisture content is satisfactory.

3.09 COMPACTION OF FILL AND BACKFILL

- A. Each layer of backfill materials as defined herein, where the material is graded such that at least 10 percent passes a No. 4 sieve, shall be mechanically compacted to the specified percentage of maximum density. Equipment that is consistently capable of achieving the required degree of compaction shall be used and each layer shall be compacted over its entire area while the material is at the required moisture content. Lightweight mechanical tampers or vibrating plate compactors shall be used in pipeline and utility trenches to prevent damage to existing or new utilities.
- B. Compaction of backfill adjacent to all subgrade structure walls shall follow a pattern of compaction which begins at the wall face and progresses outward to the outside edge of the excavation before beginning a new lift.
- C. Coarse pipe bedding material shall be compacted by means of at least 2 passes from a flat plate vibratory compactor.

- D. Flooding, ponding, or jetting shall not be used.
- E. Equipment weighting more than 10,000 pounds shall not be used closer to walls than a horizontal distance equal to the depth of the fill at that time. Hand operated power compaction equipment shall be used where use of heavier equipment is impractical or restricted due to weight limitations.
- F. Compaction Requirements: The compaction test requirements shall be in accordance with the geotechnical report or ASTM D1557 or in accordance with ASTM D4253 and D4254 as applicable. Where outside agency or utility company requirements govern, the highest compaction standards shall apply.
- G. Trench Backfill Requirements. The pipe has been structurally designed based upon the trench configuration shown in the Drawings. Where pipe embedment is disturbed after compaction, such as by the removal of sheeting and shoring, AUTHORIZED AGENT of the Owner may require recompaction to the specified minimum limit. Recompaction work shall be done in accordance with California "Construction Safety Orders" and Federal OSHA requirements, and the Contract Documents.
- H. If the allowable deflection specified for the pipe is exceeded, the CONTRACTOR shall expose and replace the pipe, repair all damaged lining and coating, and reinstall the pipe zone material and trench backfill as specified at no additional expense to the Owner.

3.10 PIPE AND UTILITY TRENCH BACKFILL

- A. Pipe Zone Backfill. The pipe zone is defined as that portion of the vertical trench cross-section lying between a plane 6 inches below the bottom surface of the pipe, i.e., the trench subgrade, and a plane at a point 12 inches above the top surface of the pipe. The bedding is defined as that portion of pipe zone backfill material between the trench subgrade and the bottom of the pipe.
- B. Bedding shall be provided for all sewers, water mains, and drainage pipelines. Unless otherwise specified or shown, for other pipelines the bedding may be omitted if all the following conditions exist.
 - 1. The pipe bears on firm, undisturbed native soil which contains only particles that will pass a one-inch sieve.
 - 2. The trench excavation is not through rock or stones.
 - 3. The trench subgrade soils are classified as suitable fill and backfill materials per this Specification.
 - 4. The trench subgrade soils have, as a maximum, a moisture content that allows compaction.
 - 5. Pipe diameters less than 3 inches.
- C. Where bedding is required, after compacting the bedding, the CONTRACTOR shall perform a final trim using a string line for establishing grade, such that each pipe section when first laid will be continually in contact with the bedding along the extreme bottom of the pipe.
- D. The pipe zone shall be backfilled with the specified backfill material as shown in the civil project plans. The CONTRACTOR shall exercise care to prevent damage to the pipeline coating, cathodic bonds, or the pipe itself during the installation and backfill operations.

- E. Trench Zone Backfill: After the pipe zone backfill has been placed as specified above, and after all excess water has completely drained from the trench, backfilling of the trench zone may proceed. The trench zone is defined as that portion of the vertical trench cross-section lying between a plane 12 inches above the top surface of the pipe and a plane at a point 18 inches below the finished surface grade. If the trench is under pavement, the upper plane is 18 inches below the roadway subgrade.
- F. Final Backfill: Final backfill is all backfill in the trench cross-sectional area within 18 inches of finished grade, or if the trench is under pavement, all backfill within 18 inches of the roadway subgrade.
- G. Periodic compliance tests may be made by the ENGINEER at no cost to the CONTRACTOR to verify that compaction is meeting the specified requirements.
- H. If compaction fails to meet the specified requirements, the CONTRACTOR shall remove and replace the backfill at proper compaction or shall increase the compaction to specified level by other means acceptable to the ENGINEER. Subsequent tests required to verify that the reconstructed backfill meets the specified compaction shall be paid by the CONTRACTOR.

3.11 EMBANKMENT CONSTRUCTION

- A. The area where an embankment is to be constructed shall be cleared of all vegetation, roots and foreign material. Following this, the surface shall be moistened, scarified to a depth of 6 inches, and rolled or otherwise mechanically compacted to 95 percent of maximum density under structures and paved areas, and 90 percent of maximum density elsewhere.
- B. Where embankment or structure fills are constructed over pipelines, the first 4 feet of fill over the pipe shall be constructed using light placement and compaction equipment that does not damage the pipe.

3.12 DISPOSAL OF SURPLUS MATERIAL

- A. Remove unsuitable materials and debris from the site and dispose of it in a legal manner. Location of disposal site and length of the haul shall be the CONTRACTOR's responsibility.

- END OF SECTION -

**SECTION 32 10 00
CONCRETE WORK**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Forming concrete site improvements.
- B. Placing and finishing concrete site improvements.
- C. Curing concrete site improvements.
- D. Protecting concrete site improvements.
- E. Dust alleviation and control.
- F. Cleanup and disposal of debris.
- G. The Work shall include the provision of all materials, equipment and apparatus not specifically mentioned herein or noted on the plans, but which are obviously necessary to complete the Work specified.

1.02 RELATED SECTIONS

- A. Section 31-2000, General Earthwork Provisions
- B. Section 31-3000, Site Preparation

1.03 REFERENCES

- A. CSS - 2018 CALTRANS STANDARD SPECIFICATIONS
 - 1. Section 10 & 18, Dust Control.
 - 2. Section 19, Earthwork.
 - 3. Section 24-29, Subbases and Bases
 - 4. Section 40, Portland Cement Concrete Pavement
 - 5. Section 51, Concrete Structures.
 - 6. Section 52, Reinforcement
 - 7. Section 73, Concrete Curbs and Gutters.
- B. UCS - Marin County Uniform Construction Standards
 - 1. Street Standards

1.04 QUALITY ASSURANCE

- A. All Work shall be done to the satisfaction of the Engineer, or his designated representative and all subgrade shall meet the approval of the designated representative of the Geotechnical Consultant.
- B. Compressive strength and cement content shall conform to the Details as shown on the plans and to the provisions of Section 73 of the CCS.
- C. No concrete for concrete site improvements shall be placed until the subgrade for same has been approved by the Geotechnical consultant and the forms and reinforcement for same have been approved by the Engineer, or his designated representative.
- D. Color and surface texture of decorative concrete paving or surfacing shall match the approved sample for the Work to the satisfaction of the Engineer or his designated representative.

E. Codes and Standards:

1. Forming of Portland Cement Concrete site improvements shall conform to the applicable provisions of Section 90-1.03B (5) of the State Standard-Specifications.
2. Placing and finishing of Portland Cement Concrete site improvements shall conform to the provisions of Section 90-1.03B (5) as applicable, of the State Standard Specifications.
3. Curing and protecting of Portland Cement Concrete site improvements shall conform to the applicable provisions of Section 90-1.03C, of the State Standard Specifications.

1.05 JOB CONDITIONS

- A. Where a portion of existing concrete site improvements is to be reconstructed, the section to be removed shall first be separated from that to remain by means of a cut with an approved concrete saw to a minimum depth of one and one-half (1-1/2) inches at the first score line beyond the area to be replaced.
- B. All repairs to concrete site improvements shall be made by completely removing and replacing the entire portion between the score lines or joints.
- C. Hand mixing of Portland Cement Concrete for use in concrete site improvements shall not be permitted.
- D. Prior to forming for concrete site improvements, the Contractor shall first secure approval of the subgrade from the Geotechnical Consultant.
- E. Prior to placing concrete for concrete site improvements, Contractor shall first secure approval of the forms from the Engineer, or his designated representative.

1.06 CERTIFICATION OF CEMENT, REINFORCING AND BATCH PLAN REQUIREMENTS

- A. The Concrete supplier shall furnish to the Inspector of Record, the Architect, and Engineer of Record, as well as the Division of the State Architect, certification that cementitious materials proposed for use have been manufactured and tested in compliance with the requirements of the appropriate ASTM specification. The concrete producer shall provide copies of the cementitious material supplier's Certificate of Compliance, that represents the materials used, by date of shipment.
- B. Mill test reports for all reinforcing shall be provided to the Inspector of Record for each shipment of reinforcing.
- C. A licensed weighmaster shall positively identify the quantity of materials for each concrete load delivered to the site by a batch ticket.
- D. The batch tickets shall accompany each load, and shall be transmitted to the Inspector of Record by the truck driver with each load identified thereon. The Inspector of Record shall keep a daily record of placements, identifying each truck, its load, time of receipt at the site, and approximate location of deposit in the structure.

PART 2 - PRODUCTS2.01 PORTLAND CEMENT CONCRETE

- A. Portland Cement Concrete for fixed form concrete site improvements shall be Type "2" conforming to the requirements of CSS Section 90-2.

- B. Aggregate gradation for concrete site improvements shall conform to the requirements of Section 90-1.02C (4) (d) of the State Standard specifications for one and one-half (1-1/2) inch maximum combined aggregates.
- C. Supplier's certificates showing conformance with these specifications shall be delivered to the Engineer or his designated representative with each shipment of materials delivered to the Job site.

2.02 EXPANSION JOINT MATERIAL

- A. Material for expansion joints in Portland Cement Concrete site improvements shall be premolded expansion joint fillers of the thickness called for on the plans conforming to the requirements of ASTM Designation D1751. Expansion joint material shall be shaped to fit the cross section of the concrete prior to being placed.
- B. Supplier's certificates showing conformance with this specification shall be delivered to the Engineer or his designated representative with each shipment of materials delivered to the job site.

2.02 REINFORCEMENT AND DOWELS

- A. Bar reinforcement for the concrete site improvements shall be deformed billet-steel bars of the size or sizes called for on the plans and shall conform to the requirements of ASTM Designation A615 for Grade 40 bars. Size and shape of bar reinforcement shall conform to the details shown or called for on the plans.
- B. Dowels, where noted or called for on the plans or detail drawings, shall be smooth billet-steel bars conforming to the requirements of ASTM Designation A615 for Grade 40 bars.
- C. Mesh for reinforcement for concrete site improvements shall be cold drawn steel wire mesh of the size and spacing called for on the plans and shall conform to the requirements of ASTM Designation A1064 for the material and ASTM Designation A185 for the mesh. Size and extent of mesh reinforcement shall conform to the details shown or called for on the plans.
- D. Tie wire for reinforcement shall be eighteen (18) gauge or heavier black annealed conforming to the requirements of ASTM Designation A82.
- E. Supplier's certificates showing conformance with this specification shall be delivered to the Engineer or his designated representative with each shipment of materials delivered to the job site.

PART 3 - EXECUTION

3.01 HANDLING OF EXCAVATED MATERIALS

- A. Surplus excavated material remaining upon completion of the Work shall become the property of the Contractor and shall be removed from the job site.
- B. All materials removed from the property shall be disposed of at a legally approved site, for the specific materials, and all removals shall be in accordance with all Federal, State, and local regulations.

3.02 FORMS FOR CONCRETE

- A. Forms for concrete site improvements shall have a smooth and true upper edge and the side of the form to be placed next to concrete shall have a smooth finish. Forms shall be constructed rigid enough to withstand the pressure of the fresh concrete to be placed without any distortion.
- B. All forms shall have been thoroughly cleaned prior to placement and shall be coated with an approved form oil sufficient to prevent adherence of concrete prior to filling.
- C. Forms shall be carefully set to the alignment and grade established by the Engineer and shall

conform to the required dimensions. Forms shall be rigidly held in place by stakes set at intervals satisfactory to the Engineer or his designated representative. Sufficient clamps, spreaders and braces shall be installed to ensure the rigidity of the forms.

- D. Forms for back and face of curbs, lip of gutters and edge of walks, valley gutters or other surface slabs shall be equal to the full depth of the concrete as shown, noted or called for on the plans or detail drawings. Composite forms made up from benders or thin planks of sufficient ply to ensure rigidity of the form in the shape required may be used on curves and curb returns.

3.03 EXPANSION JOINTS

- A. Expansion joints incorporating premolded joint fillers for fixed form concrete site improvements shall be constructed at twenty (20) foot intervals and adjacent to buildings. At each expansion joint, two (2) one-half by twelve inch (1/2" x 12") smooth slip dowels shall be installed.
- B. Expansion joints incorporating joint fillers for slip-formed concrete site improvements shall be constructed at all curb returns. At each expansion joint, two (2) one-half by twelve inch (1/2" x 12") smooth slip dowels shall be installed in the positions shown or noted on the detail drawings.
- C. Slip dowels shall be oriented at right angles to the expansion joint and shall be held firmly in place during the construction process by means of appropriate chairs.
- D. Expansion joints and slip dowels shall be constructed in valley gutters and driveway approaches at all beginning and end points of curvature and in all positions indicated or called for on the detail drawings.

3.04 WEAKENED PLANE JOINTS

- A. Weakened plane joints shall be constructed in concrete curbs, gutters and walkways between expansion joints at ten (10) foot intervals throughout. Depth of joint score shall be one (1) inch, minimum.

3.05 ACCESSORY CONSTRUCTION

- A. Concrete walkways shall be formed, placed and finished in conformance with the Project Plans or the Marin Uniform Construction Standard Plans, which ever have precedence.

3.06 FIELD QUALITY CONTROL

- A. Finish subgrade for concrete site improvements shall be subject to the approval of the Geotechnical Consultant. No forms shall be placed prior to Contractor obtaining such approval.
- B. Forms for concrete site improvements shall be subject to the approval of the Engineer or his designated representative. No concrete shall be placed prior to Contractor obtaining such approval.
- C. Appearance and finish of all concrete site improvements constructed shall be subject to the acceptance of the Engineer or his designated representative. Walkways shall not contain "bird baths" or pond water and shall be smooth and ridge free.
- D. Finish grade at top of curb, flow line of gutter and the finish cross section of concrete site improvements shall conform to the design grades and cross sections.
- E. Variation of concrete site improvements from design grade and cross section as shown or called for on the plans shall not exceed the tolerances established in Section 73-1.05 and/or 73-1.07 of the State Standard Specifications, as applicable.

3.07 DUST ALLEVIATION AND CONTROL

- A. Contractor shall be responsible for and shall provide pollution and dust abatement and control measures satisfactory to the Engineer or his designated representative continuously during the course of the Work.

3.08 RESTORATION OF EXISTING IMPROVEMENTS

- A. Existing pavement or other improvements removed or damaged due to the installation of concrete site improvements shall be replaced in kind to the satisfaction of the Engineer or his designated representative at no additional expense to the Contract.
- B. Existing landscaping or planting removed, damaged or disturbed due to the installation of concrete site improvements shall be replaced in kind to the satisfaction of the Engineer or his designated representative at no additional expense to the Contract.

3.09 CLEANUP

- A. Surplus material and construction debris remaining after installation of concrete site improvements have been completed shall become the property of the Contractor, and must be removed from the work site and disposed of in a lawful manner to the satisfaction of the Engineer or his designated representative.

END OF SECTION 32 10 00

SECTION 32 13 13

CHAIN LINK FENCING AND GATES

(THIS SECTION IS NOT PART OF DSA STRUCTURAL APPROVAL)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Chain-Link Fences: Industrial.
- B. Related Sections include the following:
 - 1. Division 31 Section "Earthwork" for site excavation, fill, and backfill where chain-link fences and gates are located.
 - 2. Specification 32 13 13.1 Concrete Work (Landscape).

1.3 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for chain-link fences and gates.
 - 1. Fence and gate posts, rails, and fittings.
 - 2. Chain-link fabric, reinforcements, and attachments.
 - 3. Gates and hardware.
- B. Samples for Initial Selection: Manufacturer's color charts or 6-inch lengths of actual units showing the full range of colors available for components with factory-applied color finishes.
- C. Samples for Verification: For each type of chain-link fence and gate indicated.
 - 1. Polymer-coated steel wire (for fabric) in 6-inch lengths.
 - 2. Polymer coating, in 6-inch lengths on shapes for posts, rails, wires, and] gate framing and on full-sized units for accessories.
- D. Product Certificates: For each type of chain-link fence, and gate, signed by product manufacturer.
 - 1. Strength test results for framing according to ASTM F 1043.
- E. Qualification Data: For Installer.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed chain-link fences and gates similar in material, design, and extent to those indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."
- C. Gates within accessible path of travel shall conform with the requirements of C.B.C. Section 1133B.2.

1.5 PROJECT CONDITIONS

- A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Chain-Link Fences and Gates:
 - a. AAA Fence Company, Santa Clara, CA (408) 727-5465
 - b. Builders Fence Company, Inc., Sacramento, CA (916) 381-4065
 - c. Master Halco, Hayward, CA (800) 899-4174
 - d. Security Contractor Services, Inc., San Jose, CA (800) 843-7893
 - e. Steel and Fence Supply, San Jose, CA (408) 573-3779

2.2 CHAIN-LINK FENCE FABRIC

- A. General: Height indicated on Drawings. Provide fabric in one-piece heights measured between top and bottom of outer edge of knuckled selvage. Comply with ASTM A 392, CLFMI CLF 2445.
- B. Zinc-coated fabric shall be galvanized after weaving with a minimum 1.2 ounces of zinc per square foot or surface area and conform to ASTM A392, Class 1. Fabric to be 9 gauge wire woven in a 2" or 1" diamond mesh (or sized as required for privacy slat inserts). Top and bottom selvage to be knuckled.

- C. Polymer Coating (PVC Coated): Minimum 7 mil PVC plastic resin finish. ASTM D 668, Class 2 over metallic-coated steel wire.
1. Color: As selected by Architect from manufacturer's standard color range, complying with ASTM F 934.
 2. Coat selvage ends of fabric that is metallic coated before the weaving process with manufacturer's standard clear protective coating.
 3. Furnish one piece fabric widths for fencing up to 12 feet high.
 4. When PVC coating is specified on drawing, fabric and all exposed fence components shall also be PVC coated.
 5. Selvage: Knuckle both selvages for chain link fence mesh and vinyl slatted fence mesh.
 6. Color to be selected by Architect from standard colors.

2.3 INDUSTRIAL FENCE FRAMING

- A. Posts and Rails: Comply with ASTM F 1043 for framing, ASTM F 1083 for Group IC round pipe, schedule 40 minimum, hot-dipped galvanized, and the following:

1. End, Corner and Pull Post

Fence Height	Pipe Size
Up to 6 foot fabric height	2.375" OD steel pipe, 3.65 lbs./ lin. ft.
Over 6 and up to 8 foot fabric height	2.875" OD steel pipe, 5.79 lbs./lin. ft.
Over 8 and up to 10 foot fabric height	4.00" OD steel pipe, 9.12 lbs./lin. ft.
Over 10 and up to 12 foot fabric height	4.00" OD steel pipe, 9.12 lbs./lin. ft.

2. Line Posts

Fence Height	Pipe Size
Up to 6 foot fabric height	1.90" OD steel pipe, 2.70 lbs./ lin. ft.
Over 6 and up to 8 foot fabric height	2.375" OD steel pipe, 3.65 lbs./lin. ft.
Over 8 foot up to 10 foot fabric height	2.875" OD steel pipe, 5.79 lbs./lin.ft.
Over 10 and up to 12 foot fabric height	2.875" OD steel pipe, 5.79 lbs./lin.ft.

3. Top, Mid and Bottom Rails

Fence Height	Pipe Size
Up to 12 foot fabric height	1.66" OD steel pipe, 2.27 lbs./lin.ft.

4. Posts, bracing and framing for fences supporting signs, windscreens, shade cloths or anything increasing the load, shall be installed as recommended by a structural engineer for that purpose.

- B. Swing Gate Post: Furnish posts for supporting single gate leaf, or one leaf of a double gate installation, for nominal gate widths as follows:

1. Gate fabric height up to and including six (6) feet in height (1.2 m):

Gate Leaf Width	Gate Post Outside Diameter
Up to 4 feet (1.2 m)	2.375 inches (60.3 mm)
Over 4 feet to 10 feet (1.2 to 3.05 m)	2.875 inches (73.0 mm)
Over 10 feet to 18 feet (3.05 to 5.5 m)	4.000 inches (101.6 mm)

2. Gate fabric height over six (6) feet (1.2 m), up to and including twelve (12) feet in height:

Gate Leaf Width	Gate Post Outside Diameter
Up to 6 feet (1.8 m)	2.875 inches (73.0 mm)
Over 6 feet to 12 feet (1.8 to 3.7 m)	4.000 inches (101.6 mm)
Over 12 feet to 18 feet (3.7 to 5.5 m)	6.625 inches (168.3 mm)
Over 18 feet to 24 feet (5.5 m to 7.3 m)	8.625 inches (219.1 mm)

- C. Coating for Steel Framing:

1. Metallic Coating:
 - a. Type A, consisting of not less than minimum 2.0-oz./sq. ft. average zinc coating per ASTM A 123/A 123M or 4.0-oz./sq. ft. zinc coating per ASTM A 653/A 653M.
 - b. Thermally bonded (PVC) plastic resin finish over metallic coating (galv) not less than 10 mils. Color to match chain link fabric.

2.4 INDUSTRIAL SWING GATES

- A. General: Comply with ASTM F 900 for single and double swing gate types.

1. Metal Pipe and Tubing: Galvanized steel. Comply with ASTM F 1043 and ASTM F 1083 for materials and protective coatings.
2. Fabric and finish: shall match adjacent fencing.

- B. Frames and Bracing: Fabricate members from round, galvanized steel tubing with outside dimension and weight according to ASTM F 900 and the following:

1. Gate Fabric Height: 2 inches less than adjacent fence height.
2. Gate Frame: Assembly using 1 7/8" OD pipe (Group IA or IC) with welded joints. Weld areas repaired with zinc rich coating applied per manufacturer's directions.
3. Leaf Width: As indicated.

C. Frame Corner Construction:

1. Welded or assembled with corner fittings and rivets, and 3/8-inch diameter, adjustable truss rods for gate panels.

D. Hardware: Provide hardware and accessories for each gate, galvanized per ASTM A153, finish to match adjacent fencing, quality for commercial and industrial applications and in accordance with the following:

1. Latches for maintenance gates, fork type or plunger-bar type, permitting operation from both sides of gate, hinges, center gate stops and keepers for each gate leaf more than 5 feet wide. Fabricate latches with integral eye openings for padlocking; padlock accessible from both sides of gate. Install concrete footing to receive drop rod in closed position. Install gate latches at a consistent height above grade throughout the campus, recommended 36" minimum and 44" maximum.
2. Latches for gates in the Accessible Path of Travel: refer to Drawings for "accessible gate latch" detail. Install gate latches at a consistent height above grade throughout the campus, recommended 36" minimum and 44" maximum.
3. Panic Hardware: Refer to Architectural Drawings for panic hardware locations and specifications.
4. Kick Plate: Install on accessible path of travel gates. Fabricate 10" high by width of gate, 1/8" thickness steel, finish to match fence material.
5. Hinges: Size and material to suit gate size, non-lift-off type, offset to permit 180 degree gate opening. Provide one (1) pair of hinges for each leaf under 6' in nominal height and one and one-half (1-1/2) pair of hinges for each leaf 6' and over in nominal height. Adjust and maintain gate spring hinges on accessible man-gates per CBC 11B-404.2.8.2 so that from the open position of 70 degrees, the door shall move to the closed position in 1.5 seconds minimum.
6. Keeper: Provide keeper for vehicle gates, which automatically engages gate leaf and holds it open position until manually released.
7. Double Gates: Provide gate stops for double gates (one for each gate), consisting of standard drop rod with concrete footings installed to receive and secure drop rods. Install fork-type, drop latch with padlock eyes as integral part of latch, permitting both gate leaves to be locked with a single padlock.

2.5 FITTINGS

- A. General: Comply with ASTM F 626.
- B. Post and Line Caps: Provide for each post.
 - 1. Pressed steel, cast iron or cast aluminum alloy designed to fit snugly over posts to exclude moisture. Fittings to conform to ASTM F626.
 - 2. Supply dome style caps for terminal posts.
 - 3. Supply post caps with loop to receive tension wire or top rail on line posts.
- C. Rail and Brace Ends: Pressed steel, cast iron or cast alloy, cup shaped to receive rail brace ends.
- D. Rail Fittings: Provide the following:
 - 1. Top Rail Sleeves: Pressed-steel or round-steel tubing 0.051 thickness by 7" long, expansion type.
 - 2. Rail Clamps: Line and corner boulevard clamps for connecting intermediate and bottom rails in the fence line-to-line posts.
- E. Brace Bands: Pressed steel, 12 gauge thickness by $\frac{3}{4}$ " wide.
- F. Tension Bands: Pressed steel, 14 gauge thickness by $\frac{3}{4}$ " wide.
- G. Tension Bars: Steel, length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post. Bars shall be $\frac{3}{4}$ " wide by $\frac{3}{16}$ " thick.
- H. Truss Rod Assemblies: Steel rod, $\frac{3}{8}$ " diameter merchant quality with turnbuckle, hot-dip galvanized.
- I. Tie Wires, Clips, and Fasteners: According to ASTM F 626.
 - 1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, complying with the following:
 - a. Hot-Dip Galvanized Steel: 0.148-inch diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.

2.6 CAST-IN-PLACE CONCRETE

- A. Materials: Portland cement complying with ASTM C 150, Type I aggregates complying with ASTM C 33, and potable water. Measure, batch, and mix Project-site-mixed concrete according to ASTM C 94/C 94M.
 - 1. Concrete Mixes: Normal-weight concrete, 2% to 4% air entrained with not less than 3000-psi compressive strength (28 days), 3-inch slump, and 1-inch maximum size aggregate.
- B. Materials: Dry-packaged concrete mix complying with ASTM C 387 for normal-weight concrete mixed with potable water according to manufacturer's written instructions.

2.7 POLYMER FINISHES

- A. Supplemental Color Coating: In addition to specified metallic coatings for steel, provide fence components with polymer coating.
- B. Metallic-Coated Steel Tension Wire: PVC-coated wire complying with ASTM F 1664, Class 2b.
- C. Metallic-Coated Steel Framing and Fittings: Comply with ASTM F 626 and ASTM F 1043 for polymer coating applied to exterior surfaces and, except inside cap shapes, to exposed interior surfaces.
 - 1. Polymer Coating: Not less than 10-mil- thick PVC finish.
- D. Color: As selected by Architect from manufacturer's full range, complying with ASTM F 934.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for a verified survey of property lines and legal boundaries, site clearing, earthwork, pavement work, and other conditions affecting performance.
 - 1. Do not begin installation before final grading is completed, unless otherwise permitted by Architect.
 - 2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 INSTALLATION, GENERAL

- A. Install chain-link fencing to comply with ASTM F 567 and more stringent requirements specified.
 - 1. Install fencing on established boundary lines inside property line or as indicated.

3.4 CHAIN-LINK FENCE INSTALLATION

- A. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated and not more than ten 10 feet, in firm, undisturbed soil.
 - 1. If diameter is not indicated, excavate holes for line and end posts to twelve (12) inches minimum width. If depth is not indicated, excavate holes for line and end posts to not less than 24" minimum plus an additional 3" for each 12" over 4' fence height. Gate posts shall be larger and as required to support heavy lateral loads. Trowel finish surface and slope to drain away from posts and flush with finish grade.
- B. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.
 - 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
 - 2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Extend concrete 2 inches above grade; shape and smooth to shed water. Protect aboveground portion of posts from concrete splatter.
 - 3. Center and align posts in holes 3 inches above bottom of excavation.
- C. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 15 degrees or more.
- D. Line Posts: Space line posts uniformly at 10 feet on center maximum unless specified otherwise on Drawing.
- E. Post Tops: Provide weather tight closure cap with loop to receive top rail. One cap for each post.
- F. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Install braces at end and gate posts and at both sides of corner and pull posts.
 - 1. Locate horizontal braces at mid-height of fabric 6 feet or higher, on fences with top rail. Install so posts are plumb when diagonal rod is under proper tension.

- G. Tension Wire: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch- diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c. Install tension wire in locations indicated before stretching fabric.
1. Top Tension Wire: Install tension wire through post cap loops.
 2. Bottom Tension Wire: Install tension wire within 6 inches of bottom of fabric and tie to each post with not less than same diameter and type of wire.
- H. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.
- I. Bottom Rails: Install as indicated on drawing in same fashion as top rail installation, spanning between posts. Install tension wire if bottom rail is not called for on drawing.
- J. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 2 inches between finish grade or surface and bottom selvage (except at Tennis Courts, which shall be 1 inch), unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
- K. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches o.c. At gates, install fabric with stretcher bars at vertical edges and top and bottom edges. Attach stretcher bars to gate frame at not more than 15 inches o.c.
- L. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at 1 end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.
1. Maximum Spacing: Tie fabric to line posts at 12 inches o.c. and to braces at 24 inches o.c.
- M. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

3.5 GATE INSTALLATION

- A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.
- B. Install kick-plate on bottom of gate as shown on details, weld ends to gate frame at 8" o.c. spacing, finish to match fencing material.

3.6 CANTILEVER FENCE SECTIONS

- A. If Contractor elects to install cantilever fence sections where support posts cannot be installed immediately adjacent to a structure:
 - 1. Cantilever section shall terminate 1-1/2" from adjacent structure.
 - 2. Cantilever section shall not extend more than 30" from center of post to adjacent structure.
 - 3. Cantilever section shall be securely welded to nearest post to prevent rotational movement around nearest post.

3.7 ADJUSTING

- A. Gate: Adjust gate to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Lubricate hardware and other moving parts.

3.8 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's personnel to adjust, operate, and maintain gates. Refer to Division 1 Section "Demonstration and Training."

END OF SECTION 32 13 13
(Revised 1/30/2024)

SECTION 32 13 13.1
CONCRETE WORK (LANDSCAPE)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- B. All grading, earthwork, excavations, backfills, compaction, and other grading operations shall be accomplished in accordance with the soils report (which shall be part of the Contract Documents). Contractor shall be responsible for securing a copy of the soils report. The project soils engineer shall be present during all grading operations. The soils engineer shall direct samples to be submitted and tests to be taken. Contractor shall cooperate with the requirements of the soils engineer.
- C. Specification Division 31, Earthwork, Soils and Earthwork, Rough Grading, and Excavation and Fill.
- D.

1.2 DESCRIPTION OF WORK:

- A. The extent of concrete work is shown on the landscape architectural drawings and details and shall include, but is not limited to, pedestrian concrete walkways, steps, ramps, curbs, mowbands, footings and walls.

1.3 QUALITY ASSURANCE:

- A. Codes and Standards: Comply with provisions of following codes, specifications and standards, except where more stringent requirements are shown or specified:
 - 1. Concrete Reinforcing Steel Institute, "Manual of Standard Practice".
 - 2. ACI 318 Building Code Requirements for Structural Concrete.
 - 3. ASTM C150, for Type I, Type II or Type III Portland cement concrete.
 - 4. Chapter 19A, 2022 C.B.C.
- B. Certification: Weighmaster Certificate

- C. Duties of the Inspector: The inspector shall notify the Architect, Structural Engineer and the Division of State Architect at least 48 hours in advance of the first pour of concrete and sufficiently in advance of subsequent pours. Comply with Section 4-333.1 and Chapter 7, Part I, Title 24, California Code of Regulations (CCR).
- D. Installer Qualifications:
 - 1. Experience: The concrete installing firm shall have contracted for and successfully completed construction of a minimum of five (5) California public school district construction projects, approved by the Division of the State Architect (DSA), within the past five (5) years of similar size, complexity, budget and scope.
 - 2. Licensure: The concrete installation firm shall hold a current, active C8 "Concrete Contractor" license classification by the California State License Board that has been consistently active for at least five (5) years and that has not been suspended or revoked.
 - 3. Supervision: The concrete installing firm shall have a qualified and experienced concrete technician on site during concrete installation.

1.4 SUBMITTALS:

- A. Shop Drawings Reinforcement: Submit shop drawings for fabrication, bending, and placement of concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, diagrams of bent bars, arrangement of concrete reinforcement. Include special reinforcement required and openings through concrete structures.
- B. Design Mixes Submittal: Submit written reports of design mixes to the Architect of each proposed mix for each class of concrete within thirty-five (35) days after the issuance of the "Notice to Proceed", but no later than ten (10) days prior to the first scheduled concrete pour. Do not begin concrete production until all design mixes have been reviewed by the Architect and independent testing facility.
 - 1. Separate submittal data shall be submitted for each mixture for the following:
 - a. Concrete Paving – Pedestrian, steps, curbs, walls, footings and concrete base at resilient surfacing

C. Submittal Checklist:

1. Installer qualifications.
2. Reinforcement shop drawings.
3. Design mixes.
4. Aggregate Base rock.
5. Expansion joint material.
6. Joint filler.
7. Sealant.
8. Concrete colors; natural and/or lamp black

PART 2 - PRODUCTS

2.1 FORM MATERIALS:

- A. Forms for Exposed Finish Concrete: Unless otherwise indicated, construct formwork for exposed concrete surfaces with plywood, metal, metal-framed plywood faced or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings. Provide form material with sufficient thickness to withstand pressure of newly-placed concrete without bow or deflection.
- B. Forms for Unexposed Finish Concrete: Form concrete surfaces which will be unexposed in finished structure with plywood, lumber, metal or other acceptable material. Provide lumber dressed on at least 2 edges and one side for tight fit.
- C. Form Coatings: Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will not impair subsequent treatments.
- D. Expansion Joint for flatwork: Asphalt impregnated felt fiber expansion material, one half inch (1/2") thick by full depth of concrete, in compliance with ASTM D1751.
- E. Expansion Joint for poured-in-place walls: Asphalt impregnated felt fiber expansion material, one half inch (1/2") thick by full depth of concrete, in compliance with ASTM D1751.

2.2 REINFORCING MATERIALS:

- A. Reinforcing Bars (Rebar): ASTM A 615, Grade 60, deformed, except #3 and smaller may be Grade 40. Test in accordance with Section 1903A and 1910A.2, 2022 C.B.C.

- B. Supports for Reinforcement: Provide supports for reinforcement including bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcing bars and welded wire fabric in place.

2.3 CONCRETE MATERIALS:

- A. Portland Cement: ASTM C 150, Type V, conforming to ACI 318-19 and test in accordance with Section 1903A, 2022 C.B.C.
- B. Fly Ash or other pozzolan can be used as a partial substitute for ASTM 150 Portland cement as follows:
 - 1. Fly Ash conforming to ASTM C618, Class F, the maximum Loss on Ignition (LOI) shall be less than 3%. Class C is not permitted.
 - 2. Slag, Ground Granulated Blast Furnace Slag Cement (GGBFS) shall conform to ASTM C989 or AASHTO M 302 Grade 100 or 120.
 - 3. Silica Fume: ASTM C1240, Standard Specification for Silica Fume used in cementitious mixtures.
 - 4. High-Reactivity Metakaolin (HRM): ASTM C618, aluminosilicate pozzolan.
- C. Normal Weight Aggregates: Shall be #57 aggregate, uniformly graded and in compliance with ASTM C 33. Test in accordance with ACI 318 Section 3.2.1 and ACI 318 Section 3.3.2.
 - 1. Maximum aggregate size: 100% passing 1" sieve for footings, walls, steps, curbs and exterior walkways.
 - 2. Class: Negligible weathering region, but not less than 1N.
 - 3. Aggregate shall be certified by testing to be "innocuous" with respect to alkali silica reactivity, or shall be certified by the supplier based on service records in accordance with ASTM C33 Appendix X1.
- D. Water: Water used in mixing concrete shall be clean and free from injurious amounts of oils, acids, alkalis, salts, organic materials or other substances that may be deleterious to concrete or reinforcement and shall be tested and verified through ASTM C1602.
- E. Admixtures: Admixtures certified by manufacturer to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material and to be compatible with other admixtures and cementitious materials. Do not use admixtures containing calcium chloride.
 - 1. Air-Entraining Admixture: ASTM C 260.
 - 2. Water-Reducing Admixture: ANSI/ASTM C 494, Type A, and contain not more than 1% chloride ions.
 - 3. High-Range, Water-Reducing Admixture: ASTM C 494, Type F

4. Water-Reducing and Accelerating Admixture: ASTM C 494, Type E
 5. Water-Reducing and Retarding Admixture: ASTM C 494, Type D
- F. Crushed Aggregate Base Rock: Shall be coarse aggregate for regular weight concrete. Aggregate shall be hard, durable, uncoated, graded, cleaned and screened crushed rock or gravel conforming to current requirements of ASTM C33. Crusher-run stone or bank-run gravel will not be permitted.
- G. Liquid Membrane-Forming Curing Compound: Liquid type membrane-forming curing compound complying with ASTM C-309, Type I, Class A unless other type acceptable to Architect. Comply with Volatile Organic Compounds (VOC) content limits, as required by Air Pollution Control Regulations on Architectural Coatings (less than 350 g/l).
- H. Curing Methods:
1. Moist Curing: continuous misting, sprinkling or ponding.
 2. Moisture-retaining cover curing: After wetting the concrete surface, cover with wet-curing blanket. Lay blanket in accordance with manufacturer's instructions, over-lapping edges and extending edges twelve (12) inches beyond area of concrete to be cured. Remove air pockets. Repair any holes or tears that occur using sheeting material and waterproof tape.
 3. Compound curing: Apply specified curing compound as soon as final finishing operations are complete. Use as recommended by the manufacturer's written instructions.
- I. Color Materials:
1. Liquid lamp black shall be default color for concrete flatwork not specified on drawings as "Natural" or "Colored". Add one pint of liquid lamp black per cubic yard of concrete flatwork.
 2. Concrete specified as "Natural" shall have no color added. Unless specified otherwise on Drawings, concrete curbs, steps, and walls to be "Natural."
- J. Concrete Colors and Patterns:
1. Type I – Lamp Black with asphalt impregnated felt fiber expansion material.
- 2.4 PROPORTIONING AND DESIGN OF MIXES:
- A. Prepare design mixes for each type and strength of concrete. Use an independent testing facility acceptable to Architect for preparing and reporting proposed mix designs. The testing facility shall not be the same as used for field quality control testing unless otherwise acceptable to Architect.

- B. Comply with Section ACI 318- 19. The compressive strength of concrete shall be proportioned by one of the following methods: Design Mix (Method B) or Pre-Test Mix (Method C).
 - C. Submit written reports to Architect of each proposed mix for each class of concrete at least 10 days prior to the first scheduled concrete pour. Do not begin concrete production until mixes have been reviewed by Architect.
 - D. Design mixes to provide normal weight concrete with the following properties:
 - 1. Concrete Paving – Pedestrian, steps, curbs, walls, footings and concrete base at resilient surfacing:
 - a. 3,000 psi 28-day compressive strength
 - b. 0.60, maximum, water to cement (W/C) ratio
 - c. Minimum cementitious content shall be 470 pounds, minimum, per cubic yard.
 - d. Aggregate to be 1" maximum.
 - e. 28-day shrinkage, SEAONC Method: 0.050 maximum.
 - E. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to Owner and as accepted by Architect. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Architect before using in work.
 - F. Admixtures: Use only as indicated by approved design mix.
 - G. Color Additive for concrete not specified as "colored": add one pint of liquid lamp black per cubic yard of all exterior Concrete Paving – Pedestrian and Concrete Paving - Vehicular. Steps, Curbs, Walls and Footings shall not include lamp black in the design mix.
 - H. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:
 - 1. All concrete: Shall be four (4) inches, plus or minus one (1) inch.
- 2.5 CONCRETE MIXES:
- A. Ready-Mix Concrete: Comply with ASTM C94. Measure, batch and mix concrete materials and concrete according to ASTM C-94. Furnish batch certificates, indicating project identification, name and number, date, mixture type, mixing time, quantity and amount of water added for each batch discharged and used in the Work to the Architect.

2.6 SACK FINISH MORTAR

- A. Mortar shall be composed of Portland cement, sand, and water proportioned and mixed as specified in this Section 51 1.135.
- B. Mortar shall be furnished and placed in recesses and holes, on surfaces, under structural members, and at other locations specified in these specifications, the special provisions or shown on the plans.
- C. The proportion of cement to sand, measured by volume, shall be one to two (1:2) unless otherwise specified.
- D. Materials shall conform to the provisions in Section 90, "Portland Cement Concrete."
- E. The maximum size of sand shall not be larger than 0.5 of the size of the recess, hole or space where the mortar is to be placed.
- F. The mortar shall contain only enough water to permit placing and packing.
- G. Concrete areas to be in contact with the mortar shall be cleaned of all loose or foreign material that would in any way prevent bond between the mortar and the concrete surfaces and shall be flushed with water and allowed to dry to a surface dry condition immediately prior to placing the mortar.
- H. The mortar shall completely fill and shall be tightly packed into recesses and holes, on surfaces, under structural members, and at other locations specified. After placing, all surfaces of mortar shall be cured by the water method as provided in Section 90 7, "Curing Concrete," for a period of not less than 3 days.
- I. Keyways, spaces between structural members, holes, spaces under structural members and other locations where mortar could escape shall be mortar tight before placing mortar.
- J. No load shall be allowed on mortar that has been in place less than 72 hours, unless otherwise permitted by the Engineer.
- K. All improperly cured or otherwise defective mortar shall be removed and replaced by the Contractor at the Contractor's expense.

PART 3 - EXECUTION

3.1 AGGREGATE BASE PLACEMENT

- A. Place aggregate in maximum 6-inch layers and compact to specified density.
- B. Level and contour surfaces to elevations and gradients indicated.
- C. Add small quantities of fine aggregate to coarse aggregate as appropriate to assist compaction.
- D. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.
- E. Use mechanical tamping equipment in areas inaccessible to compaction equipment.
- F. Tolerances:
 - 1. Flatness: Maximum variation of 1/4 inch measured with 10-foot straight edge.
 - 2. Scheduled Compacted Thickness: Within 1/4 inch.
 - 3. Variation From Design Elevation: Within 1/2 inch.
- G. Field Quality Control:
 - 1. Flatness: Compaction testing will be performed in accordance with ASTM D1557.
 - 2. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to Owner.

3.2 FORMS

- A. FORMS – FOR FLATWORK
 - 1. Design, erect, support, brace and maintain formwork to support vertical and lateral loads that might be applied until such loads can be supported by concrete structure. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation and position.
 - 2. Construct forms to sizes, shapes, lines and dimensions shown, and to obtain accurate alignment, location, grades, level and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts and other features required in work. Use selected materials to obtain required finishes. Solidly butt joints and provide backup at joints to prevent leakage of cement paste.

3. Fabricate forms for easy removal without hammering or prying against concrete surfaces or damage to cast-in-place concrete or adjacent materials. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, reglets, recesses, and the like, to prevent swelling and for easy removal.
4. Provisions for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses and chases from trades providing such items. Accurately place and securely support items build into forms. Comply with ACI 347 and ACI 318-19 Section 26.11.
5. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt or other debris just before concrete is placed. Retighten forms and bracing after concrete placement is required to eliminate mortar leaks and maintain proper alignment.
6. Coat contact surfaces of forms with a form-coating compound before reinforcement is placed.

3.3 PLACING REINFORCEMENT:

- A. Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials which reduce or destroy bond with concrete.
- C. Accurately position, support and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as required.
- D. Place reinforcement to obtain at least minimum coverage for concrete protection. Arrange, space and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.
- E. Where concrete is installed at door thresholds and/or transitions to building interior spaces, 24" length, #3 smooth rebar dowels shall be installed 12" into the new concrete paving and 12" into the adjacent building structure, spaced at 18" on center with a minimum of two in each location. Epoxy to secure end of dowel set into building and lubricate end cast into new concrete paving.

- F. Where concrete is installed at door thresholds of modular buildings with steel framing, #5 rebar shall be welded securely to building floor plate, extending 12" into new concrete paving, spaced 18" on center with a minimum of two at each door threshold. Lubricate end cast into new concrete paving.
- G. Where concrete is installed adjacent to concrete walkways that are part of the building structural pad, 24" length, #3 smooth rebar dowels shall be installed 12" into the new concrete paving and 12" into the adjacent building structure pad, spaced at 18" on center spacing. Epoxy to secure end of dowel set into building structural pad and lubricate end cast into new concrete paving.

3.4 EXPANSION AND CONTROL JOINTS:

- A. Locate and install joints so as not to impair strength and appearance of the structure, and as acceptable to Architect.
- B. Continue reinforcement across expansion and control joints or install smooth rebar dowels.
- C. Control/score joints (for walkways, steps, ramps and curbs): Unless shown otherwise on plan, install ½" radius score joints evenly spaced at a maximum of eight feet in two perpendicular directions, continuous and one third the depth of the slab.
- D. Control/score joints (for walls, steps and vertical surfaces): Unless shown otherwise on plan, install ½" radius score joints evenly spaced at a maximum of eight feet in on center. Align vertical wall score joints with horizontal paving joints whenever possible. Install ½" radius or chamfered edge at each side of joint as called for in drawings, continuous and 1 ½" in depth.
- E. Expansion Joints for new walkways and ramps: Asphalt impregnated felt fiber expansion material, one half inch (1/2") thick by full depth of concrete, in compliance with ASTM D1751.
- F. Expansion Joints (for walls, steps and vertical surfaces): Unless shown otherwise on plan, install expansions joints where walls meet existing or proposed structures and evenly spaced at a maximum of 24 feet in two perpendicular directions. Align vertical wall expansion joints with horizontal paving joints whenever possible. Install ½" asphalt saturated felt expansion joint material ½" below the finish surface where ½" radius concrete edges are indicated and flush with base of chamfer where chamfer edges are indicated and continuously throughout the concrete section. Install ½" radius or chamfered edge at each side of joint as called for in drawings.

3.5 INSTALLATION OF EMBEDDED ITEMS:

- A. General: Set and build into work anchorage devices and other embedded items required for other work that is attached to, or supported by, cast-in-place concrete. Use setting drawings, diagrams, instructions and directions provided by suppliers of items to be attached thereto.
- B. Edge Forms and Screed Strips for Slabs: Set edge forms or bulkheads and intermediate screed strips for slabs to obtain required elevations and contours in finished slab surface. Provide and secure units sufficiently strong to support types of screed strips by use of strike-off templates or accepted compacting type screeds.

3.6 PREPARATION OF FORM SURFACES:

- A. Coat contact surfaces of forms with a form-coating compound before reinforcement is placed.

3.7 CONCRETE PLACEMENT:

- A. Pre-placement Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast-in, in accordance with ACI 318-14. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work. Moisten wood forms immediately before placing concrete where form coatings are not used.
- B. Coordinate the installation of joint materials with placement of forms and reinforcing steel.
- C. General: Comply with ACI 304, and as herein specified.
- D. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation.
- E. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers not deeper than 24" and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.
- F. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI recommended practices.

- G. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at least 6" in to preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.
 - H. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction (expansion) joints, until the placing of a panel or section is completed.
 - I. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 - J. Bring slab surfaces to correct level with straightedge and strikeoff. Use bull floats or darbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.
 - K. Maintain reinforcing in proper position during concrete placement operations.
 - L. Cold Weather Placing: Do not place concrete when air temperature is below 40 degrees F., or expected to fall below within 24 hours. Comply with ACI 306.
 - M. Hot Weather Placing: When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305.
 - N. Concrete flatwork over-pour: Over-pour is excess concrete spilling beyond the limits of the concrete forms. Contractor shall remove over-pour to allow for installation of tree root barriers, irrigation and similar landscape improvements.
- 3.8 FINISH OF FORMED SURFACES:
- A. Rough Form Finish: For formed concrete surfaces not exposed-to-view in the finish work or by other construction, unless otherwise indicated. This is the concrete surface having texture impaired by form facing material used, with tie holes and defective areas repaired and patched and fine and other projections exceeding 1/4" in height rubbed down or chipped off.

- B. Smooth Form Finish: For formed concrete surfaces exposed-to-view, or that are to be covered with a coating material applied directly to concrete, or a covering material applied directly to concrete, such as waterproofing, damp proofing, painting or other similar system. For "as-cast" concrete surface obtained with selected form facing material, arranged orderly and symmetrically with a minimum of seams, repair and patch defective areas with fins or other projections completely removed and smoothed
- C. Related Unformed Surfaces: At tops of walls, horizontal offsets surfaces occurring 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.

3.9 CONCRETE EXTERIOR FLATWORK FINISHES:

- A. Float Finish: Apply float finish to concrete slab surfaces to receive trowel finish and other finishes as hereinafter specified.
- B. After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats, or by hand-floating if area is small or inaccessible to power units. Check and level surface plane to a tolerance not exceeding 1/8" in 10' when tested with a 10' straightedge. Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.
- C. Round top edges of all exposed slabs, nosing, etc. with 3/8" radius edging tool, unless chamfered or otherwise noted.
- D. Non-Slip Broom Finish (NSBrm-Fn): Unless specified otherwise, apply non-slip broom finish to exterior concrete walks, platforms, steps and ramps, and elsewhere as indicated. Slopes less than 6% shall have a medium broom finish. Slopes 6% and greater shall be heavy broom slip resistant.
- E. Immediately after trowel finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.10 CONCRETE CURING AND PROTECTION:

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 305R-10, Guide to Hot Weather Concreting.

- B. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days and above 50 deg. F.
- C. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least 7 days in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period.
- D. Curing Method: Perform curing of concrete by moist curing, by moisture-retaining cover curing, by curing compound, and/or by combinations thereof, at contractor's option except as noted during hot weather.
- E. Cold Weather Requirements: Protect concrete from freezing conditions during the first seven (7) days after placement.
- F. Hot Weather Requirements: When hot weather conditions will cause an evaporation rate exceeding 0.2 pounds of water per square foot per hour, as determined by Figure 2.1.5 of ACI 305, cure for initial 24 hours minimum by moisture retaining cover methods.

3.11 REMOVAL OF FORMS:

- A. Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided curing and protection operations are maintained.
- B. Form removal shall comply with ACI 347 and ACI 318-19 Section 26.11.

3.12 RE-USE OF FORMS:

- A. Clean and repair surfaces of forms to be re-used in work. Split, frayed, delaminated or otherwise damaged form facing material will not be acceptable for exposed surfaces. Apply new form coating compound as specified for new formwork.
- B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joint to avoid offsets. Do not use "patched" forms for exposed concrete surfaces, except as acceptable to Architect.

3.13 MISCELLANEOUS CONCRETE ITEMS:

- A. Filling-In: Fill-in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place and cure concrete as herein specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and steel-troweling surfaces to a hard, dense finish with corners, intersections and terminations slightly rounded.
- C. Equipment and Enclosure Bases and Foundations: Provide machine and equipment bases and foundations, as shown on drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with certified diagrams or templates of manufacturer furnishing machines and equipment.

3.14 CONCRETE SURFACE REPAIRS

- A. Concrete pavement surface repairs shall be stable, firm and slip resistant per CBC 11B-302.1.
- B. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to Owner's Representative.
- C. Cut out honeycomb, rock pockets, voids over 1/4" in any dimension, and holes left by tie rods and bolts, down to solid concrete but, in no case to a depth of less than 1". Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water and brush-coat the area to be patched with specified bonding agent. Place patching mortar, colored to match surrounding surfaces after bonding compound has dried. Surfaces exposed-to-view shall be sacked with colored mortar as directed by Owner's Representative.
- D. Repair of Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Owner's Representative. Surface defects, as such, include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets; fins and other projections on surface; and stains and other discolorations that cannot be removed by cleaning.
- E. Flush out form tie holes, fill with dry pack mortar.
- F. Repair concealed formed surfaces, where possible, that contain defects that affect the durability of concrete. If defects cannot be repaired, remove and replace concrete.

- G. Repair of Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface plane to tolerances specified for each surface and finish. Correct low and high areas as herein specified. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness, using a template having required slope.
- H. Repair finished unformed surfaces that contain defects, which affect durability of concrete. Surface defects, as such, include crazing, cracks in excess of 0.01" wide or which penetrate reinforcement or completely through non-reinforced sections regardless of width, spalling, pop-outs, honeycomb, rock pockets, and other objectionable conditions. Color of repair shall match surrounding surface color.
- I. Correct high areas in unformed surfaces by grinding, after concrete has cured at least 14 days.
- J. Correct low areas in unformed surfaces during, or immediately after completion of surface finishing operations by cutting out low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete. Proprietary patching compounds may be used when acceptable to Owner's Representative.
- K. Repair methods not specified above may be used, subject to acceptance of Owner's Representative.

3.15 SACK FINISH WALLS, STEP SEATING AND CURBS

- A. Sack finish shall consist of filling holes or depressions in the surface of the concrete, repairing all rock pockets, removing fins, and removing stains and discolorations visible from traveled ways. Sack finish, unless otherwise specified, shall be considered as a final finish where designated on the plans and details.
- B. Except as provided herein, form bolts and any metal placed for the convenience of the Contractor shall be removed to a depth of at least one inch below the surface of the concrete. All rock pockets and other unsound concrete shall be removed. The resulting holes or depressions shall be cleaned and filled with mortar. Form bolts projecting into the cells of box girders need not be removed unless deck forms are removed from the cells, in which case the bolts shall be removed flush with the surface of the concrete.
- C. Mortar used to fill bolt holes shall conform to the provisions in this Section for "Mortar." Other depressions and pockets shall be filled with packed mortar as directed by the Architect and the mortar shall be cured in conformance with the provisions in this Section

- D. For exposed surfaces, integral concrete color (LM Scofield Chromix) cement shall be added to the mortar in an amount sufficient to result in a patch which, when dry, matches the surrounding concrete.
- E. If rock pockets, in the opinion of the Architect, are of such an extent or character as to affect the strength of the structure materially or to endanger the life of the steel reinforcement, the Architect may declare the concrete defective and require the removal and replacement of the portions of the structure affected.

3.16 QUALITY CONTROL TESTING DURING CONSTRUCTION:

- A. The Owner will employ a testing laboratory to perform other tests and to submit test reports.
- B. Reinforcing steel shall be supplied with heat number and mill analysis per ACI 318-19.
- C. Shrinkage Limitation: All concrete shall meet drying shrinkage limitations as follows:
- D. 0.032 percent at age 21 days, with tolerance of +25% for specimens taken during the course of the work.
- E. The use of aggregates with a proven history of compliance with the above limitations will be accepted as fulfilling this requirement. In the absence of satisfactory evidence, the laboratory shall prepare specimens (4" x 4" prisms 10" gage length, ASTM C-157-64T) and test for compliance prior to approval.

END OF SECTION 32 13 13.1

(Revised 1/30/2024)

SECTION 32 14 00
UNIT PAVERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. All grading, earthwork, excavations, backfills, compaction, and other grading operations shall be accomplished in accordance with the soils report (which shall be part of the Contract Documents). Contractor shall be responsible for securing a copy of the soils report. The project soils engineer shall be present during all grading operations. The soils engineer shall direct samples to be submitted and tests to be taken. Contractor shall cooperate with the requirements of the soils engineer.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Reinstallation of unit pavers set in new aggregate and new sand setting bed.
- B. Related Sections include the following:
 - 1. Specification Division 31, Earthwork, Soils and Earthwork, Rough Grading, and Excavation and Fill.

1.3 SUBMITTALS

- A. Product Data for the following:
 - 1. Paver Sealer

1.4 STORAGE, AND HANDLING

- A. Protect unit pavers and aggregate during storage and construction against soiling or contamination from earth and other materials.
 - 1. Cover pavers with plastic or use other packaging materials that will prevent rust marks from steel strapping.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

- C. Store liquids in tightly closed containers protected from freezing.
- D. Store asphalt cement and other bituminous materials in tightly closed containers.

1.5 PROJECT CONDITIONS

- A. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.
- B. Do not install sand or pavers during heavy rainfall or on a saturated base.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Unit Pavers:
 - 1. Remove & Reinstall Existing Unit Pavers

2.2 ACCESSORIES

- A. Geotextile fabric: shall be Mirafi 500x for interlocking concrete paver stabilization comprised of UV stabilized polypropylene silt film with puncture and tear resistant properties and high tensile strength and uniform openings for filtration.

2.3 AGGREGATE SETTING-BED MATERIALS

- A. Sand for Leveling Course: Sound, sharp, washed, concrete sand complying with gradation requirements of ASTM C 33 for fine aggregate and sieve according to ASTM C 136. Do not use mason sand or sand conforming to ASTM C 144 for the leveling bed.
- B. Sand for Joints: Sakrete Polymeric Joint Sand mixture of sand and special additives specifically for paving stone joints. Engineered to resist wind, rain, freezing conditions and substrate movement without washing away.
- C. Crushed Aggregate Baserock: Shall be class II aggregate, for regular weight concrete. Aggregate shall be hard, durable, uncoated, graded, cleaned and screened crushed rock or gravel conforming to current requirements of ASTM C33. Crusher-run stone or bank-run gravel will not be permitted. The aggregate size shall be 3/4" minus.
- D. Water: Potable.

2.4 PAVER SEALER

- A. Sealer for pavers and concrete banding adjacent to pavers shall be Glaze 'N Seal "Enhanced Look", low VOC, clear protection for concrete and masonry, below maximum limit SCAQMD regulations, or equal.
- B. Available through Glaze 'N Seal Products. (949) 250-9104.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas indicated to receive paving for compliance with requirements for installation tolerances, compaction and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. Compaction of soil subgrade shall be at least 98% standard Proctor density per ASTM D 698 for pedestrian areas and driveways. Compaction to at least 98% modified Proctor density per ASTM D 1557 in areas subject to heavy vehicular traffic. Stabilization of the subgrade and/or base material may be necessary with weak or saturated subgrade soil.
- C. Where pavers are to be installed over waterproofing, examine waterproofing installation, with waterproofing Installer present, for protection from paving operations. Examine areas where waterproofing system is turned up or flashed against vertical surfaces and horizontal waterproofing. Proceed with installation only after protection is in place.

3.2 PREPARATION

- A. Proof-roll prepared subgrade surface to check for unstable areas and areas requiring additional compaction. Proceed with unit paver installation only after deficient subgrades have been corrected and are ready to receive subbase for unit pavers.
- B. Install aggregate base as detailed in 3" to 4" lifts. Compaction of aggregate base shall be at least 98% standard Proctor density per ASTM D 698 for pedestrian areas and driveways. Compaction to at least 98% modified Proctor density per ASTM D 1557 in areas subject to heavy vehicular traffic.
- C. Only install as much base aggregate and sand settling bed as can be covered with pavers in the same day.

- D. Prior to installation of geotextile fabric and screeding the bedding sand, the recommended base surface tolerance should be $\pm 3/8"$ over a 10 foot straight edge.
- E. Install geotextile fabric per manufacturer over entire aggregate base surface. Overlap fabric edges 12" to 18" at seams.
- F. Install edge restraints per manufacturer recommendations and/or as detail within Drawings.

3.3 INSTALLATION, GENERAL

- A. Moisten base aggregate such that a handful can be formed into a ball and keep its shape. If a ball is formed and water is squeezed out, it is too wet. When adding water, use a steady stream and not a mist to limit wind drift and evaporation.
- B. Do not use unit pavers with chips, cracks, voids, discolorations, and other defects that might be visible or cause staining in finished work.
- C. Mix pavers from several pallets or cubes, as they are placed, to produce uniform blend of colors and textures.
- D. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.
- E. If pavers are cut, cut with a wet saw and rinse the paver immediately after cutting. The mix of water and paver dust results in a substance that will stain any surface it is dripped on.
- F. Joint Pattern: pattern and direction shall be reviewed and approved by architect prior to installation.
- G. Pavers over Waterproofing: Exercise care in placing pavers and setting materials over waterproofing so protection materials are not displaced and waterproofing is not punctured or otherwise damaged. Carefully replace protection materials that become displaced and arrange for repair of damaged waterproofing before covering with paving.
 - 1. Provide joint filler, where indicated, at waterproofing that is turned up on vertical surfaces; or, if not indicated, provide temporary filler or protection until paver installation is complete.
- H. Tolerances: Do not exceed 1/32-inch (0.8-mm) unit-to-unit offset from flush (lippage) nor 1/8 inch in 10 feet (3 mm in 3 m) from level, or indicated slope, for finished surface of paving.

- I. Tolerances: Do not exceed 1/16-inch (1.6-mm) unit-to-unit offset from flush (lippage) nor 1/8 inch in 24 inches (3 mm in 600 mm) and 1/4 inch in 10 feet (6 mm in 3 m) from level, or indicated slope, for finished surface of paving.
- J. Provide steps made of pavers as indicated. Install paver steps before installing adjacent pavers.

3.4 INSTALLATION OF AGGREGATE BASE, SAND SETTING-BED AND PAVERS

- A. Place sand leveling course and screed to a thickness of 1 to 1-1/2 inches (25 to 38 mm), taking care that moisture content remains constant and density is loose and constant until pavers are set and compacted. Sand must be dry when placed to avoid settlement.
- B. Treat leveling base with soil sterilizer to inhibit growth of grass and weeds.
- C. Place pavers carefully by hand in straight courses, maintaining accurate alignment and uniform top surface. Protect newly laid pavers with plywood panels on which workers can stand. Advance protective panels as work progresses, but maintain protection in areas subject to continued movement of materials and equipment to avoid creating depressions or disrupting alignment of pavers. If additional leveling of paving is required, and before treating joints, roll paving with power roller after sufficient heat has built up in the surface from several days of hot weather.
- D. Set clean pavers with joints tight, tapping pavers horizontally to ensure tight fit. Verify pattern with Architect prior to installation. Lay out pavers prior to installation to ensure pavers are spread in a manner to avoid cutting pavers to a size less than two (2) inches in any direction.
- E. Sweep pavers clean before compacting into sand leveling course.
- F. Vibrate pavers into leveling course with a low-amplitude plate vibrator capable of a 3500- to 5000-lbf (16- to 22-kN) compaction force at 80 to 90 Hz. Perform at least three passes across paving with vibrator. Vibrate under the following conditions:
 - 1. After edge pavers are installed and there is a completed surface or before surface is exposed to rain.
 - 2. Before ending each day's work, fully compact installed concrete pavers to within 36 inches (900 mm) of the laying face. Cover open layers with nonstaining plastic sheets overlapped 48 inches (1200 mm) on each side of the laying face to protect it from rain.

- G. Fill joints with Sakrete Paver Set Sand per manufacturer recommendations. Pavers must be dry prior to placement. Pour Paver Set Sand over clean pavers. Sweep into joints, filling completely. Remove excess sand from surface prior to wetting. Failure to remove excess sand may result in staining. Spray using a mist.

3.5 REPAIR, CLEANING, AND PROTECTION

- A. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units as intended. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.

- B. Cleaning: Wash and scrub clean.

3.6 PAVER SEALER

- A. Prepare paver surface to be sealed per manufacturer recommendations.
- B. Protect adjacent surfaces, structures and plant materials from over-spray.
- C. Apply per manufacturer recommendations.
- D. Perform "Water Penetration Test" on sealed surface. Apply additional sealer if water does not bead up on the surface. Apply as many coats as necessary for water to bead up on the surface.

END OF SECTION 32 14 00

(Revised 1/30/2024)

**SECTION 32 17 23.13
PAINTED PAVEMENT MARKINGS**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

- A. Extent of asphalt surface treatment work is shown on drawings.

1.3 QUALITY ASSURANCE:

- A. Applicator Qualifications: Work performed in accordance with this section shall be performed by an installer accredited and/or certified by the surfacing material manufacturer.

1.4 RELATED SECTIONS

- A. 32 13 13.1 Concrete Work (Landscape)

1.5 SUBMITTALS:

- A. Product Data: Include material descriptions, finishes and color chart.
- B. Accreditation Certificate for applicator.

1.6 SITE CONDITIONS:

- A. For new concrete paving and/or asphalt paving, Contractor shall review paving to receive surface treatment and verify the paving is free of defects and structurally stable. Notify Owner's Representative prior to proceeding with surface treatment to make necessary repairs.
- B. For new concrete paving and/or asphalt paving, the surface shall be dry and free from all foreign matter, including, but not limited to dirt, dust, de-icing materials, and chemical residue. Notify Owner's Representative prior to proceeding with surface treatment to make necessary repairs.
- C. For existing paving, Contractor shall review the paving does not contain any defects including cracks, ruts or potholes nor demonstrate any flushing, raveling or like deficiencies. Notify Owner's Representative prior to proceeding with surface treatment to make necessary repairs.

- D. For existing paving, Contractor shall review the surface conditions prior to placing bid. Bid shall include removal of existing pavement markings by sand-blasting, water-blasting, grinding, or other approved mechanical methods. The removal shall, to the fullest extent possible, cause no significant damage to the pavement surface. Obtain approval from Owner's Representative in writing if the removal of surface markings is satisfactory. Work shall not proceed until this approval is granted.

PART 2 - PRODUCTS

2.1 MATERIALS:

- A. Painted Pavement Markings shall consist of a product formulated to provide a balance of performance properties for a durable, long-lasting, color and a texture finish for asphalt pavement surfaces. Paint for Pavement Markings shall be environmentally safe and meet EPA requirements for Volatile Organic Compounds (VOC).
- B. Manufacturer: Painted Pavement Markings shall be Kelly Moore Acryshield Exterior Paint or equal, with H&C SharkGrip additive for non-skid finish.
1. Products available through:
 - a. Kelly-Moore at www.kellymoore.com, available through retail stores that cater to commercial clients. Allow a minimum of 1 week lead time to order.
 - b. H&C Concrete at www.hcconcrete.com, 1-800-867-8246
- C. Painted Pavement Markings shall be white, unless noted otherwise on the plans, water based, 100% acrylic, lead free striping and marking materials manufactured for permanent, exterior game line marking.
- D. Equipment for Painted Pavement Marking Application: Contractor shall execute work using equipment appropriate for the design / layout of the painted pavement markings. Contractor shall not use equipment not suitable for this application which may compromise the performance of the coatings.
1. Brush: Synthetic Bristle, size of brush as required.
 2. Roll: 3/8" – 3/4" Synthetic Cover
 3. Sprayer: 2000 – 2500 PSI / .015" - .021" Tip
- E. Painted Pavement Marking Templates:
1. Contractor shall create and fabricate sturdy, non-flexible, waterproof templates for each Challenge Course Activity Station.
 2. Acceptable Template Materials are plastic, metal, or approved equal.

3. Contractor shall clean and thoroughly dry each template prior to re-use.
4. Refer to section 3.6 for Close-Out items related to this section.

PART 3 - EXECUTION

3.1 GENERAL:

- A. Painted Pavement Markings shall be supplied and applied on non-textured pavement surfaces by a manufacturer Accredited or Certified Applicator in accordance with the plans and specifications.

3.2 COATINGS:

- A. Layers shall be applied as necessary to achieve full coverage, even color, uniform sheen, and maximum durability. Apply 1 coat as primer and 1-2 additional topcoats. Maintain a wet edge while painting. Allow at least 4 hours drying time between each coat.

3.3 COATING APPLICATION:

- A. The pavement surface shall be completely dry and thoroughly cleaned prior to application of coatings.
- B. The first layer of coating shall be carefully applied to work the coating material into the pavement surface. Subsequent applications shall be brushed or rolled. Each application of coating material shall be allowed to dry for a minimum of four hours before applying the next layer.
- C. The applicator shall apply the pavement markings only when the air temperature is 35°F and rising and will not exceed 100°F within 4 hours of application. No precipitation should be expected within 48 hours.
- D. Apply paint in large areas using a roller and only use a brush for small areas. Edges shall be crisp and conform to drawings and diagrams.
- E. Add H&C SharkGrip slip-resistant additive into final topcoat of paint per manufacturer recommended rates, approximately 3.2 oz per gallon, and apply with a roller.
- F. Protect area from trespass as required until all colors are dry and ready to use.

3.4 COATING COVERAGE AND THICKNESS

- A. The following minimum coverage and thicknesses are recommended; apply at a rate as necessary for thorough coverage and vibrant colored product:

Coverage	Thickness Wet	Thickness Dry
250- 400 SF/gallon	4 - 6 mils	1.4 – 2.4 mils

3.5 OPENING TO TRAFFIC

- A. Minimally, the surface coating shall be 100% dry before traffic is permitted. Drying time may vary between one to five hours depending on the weather.

3.6 CLOSE-OUT

- A. Contractor shall deliver (2) full sets of unused templates for each Challenge Course activity station to Owner's Representative.
1. Contractor shall create and fabricate sturdy, non-flexible, waterproof templates for each Challenge Course Activity Station.
 2. Acceptable Template Materials are plastic, metal, or approved equal.

END OF SECTION 32 17 23.13

(Revised 1/30/2024)

SECTION 32 18 16
SYNTHETIC RESILIENT SURFACING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to the work of this section.

1.2 DESCRIPTION OF WORK:

- A. The extent of work in this Section including furnishing, delivery, installation and warranty of a complete synthetic turf system including drainage, synthetic turf, and resilient infill material.

1.3 QUALITY ASSURANCE:

- A. All manufactured items shall be inspected and approved upon delivery.
- B. Coordinate all work with the work of other sections to avoid delay and interference with other work.
- C. Protect from damage and intrusion of deleterious materials during delivery, handling, storage, and installation.

1.4 REFERENCES

- A. California Building Code Section 1B-1008.2.6.1

- B. RELATED SECTIONS:

- 1. 32 13 13.1 Concrete Work (Landscape)
 - 2. 32 18 16.16 Playground Protective Surface Under Synthetic Turf

1.5 REFERENCES

- A. ASTM Standard Test Methods

- 1. F1292 – Standard specification for Impact Attenuation of Surfacing Materials within the Use Zone of Playground Equipment.
 - 2. F1951 – Standard Specification for Determination of Accessibility of Surface Systems under and around Playground Equipment.
 - 3. D1577 – Standard Test Method for Linear Density of Textile Fiber

4. D5848 – Standard Test Method for Mass Per Unit Area of Pile Yarn Floor Covering
5. D418 – Standard Test Method for Testing Pile Yarn Floor Covering Construction
6. D1338 – Standard Test Method for Tuft Bind of Pile Yarn Floor Coverings
7. D1682 – Standard Method of Test for Breaking Load and Elongation of Textile Fabrics
8. D5034 – Standard Test Method of Breaking Strength and Elongation of Textile Fabrics (Grab Test)
9. F1551 – Standard Test Methods for Water Permeability
10. D2859 – Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials
11. F355 – Standard Test Method for Shock-Absorbing Properties of Playing Surfaces
12. D1557 – Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.

B. STC Suggested Guidelines for the Essential Elements of Synthetic Turf Systems

C. IPEMA Certification: Manufacturer must provide proof of certification. In the interest of public playground safety, IPEMA provides an independent laboratory which validates a manufacturer's certification on conformance to ASTM F1292. SITE INSPECTION

1.6 INSTALLING CONTRACTOR QUALIFICATIONS:

- A. Contractor must hold a current "A" License (in conjunction with related specialty license).
- B. Contractor must have at least (1) CPSI & (1) NPCAI on staff to ensure familiarity with all playground regulations & requirements.
- C. Contractor must have over 10 years of playground installation & playground surfacing experience.
- D. Contractor must be a "certified installer" for the synthetic turf product manufacturer being installed.
- E. Contractor must provide reference confirming they have installed a (similar size & scope) School District project, to be not less than 20 play area synthetic turf sites within 1 School District in the last 3 years.
- F. Contractor must provide a list of project references for no less than 10 synthetic turf "Play Area"/ "Safety Surfacing" installations performed in the last year.

1.7 PROJECT CONDITIONS

- A. Coordinate all work with the work of other sections to avoid delay and interference with other work.
- B. Protect excavations by shoring, bracing sheeting, underpinning, or other methods as required to prevent cave-ins or loose dirt from entering excavations. Barricade open excavations and post warning lights at work adjacent to public streets and walks.

1.8 SITE INSPECTION

- A. The inspection shall include a check for planarity. The finished surface shall not vary from a true plane more than 0.25" in 10' when measured in any direction. The Contractor shall provide all required tools and materials needed for the planarity check, which may include but not be limited to, a laser level, string line, straight edge and/or other assessment materials. The Contractor shall mark in the field any deviations from grade in excess of those specified above, as well as provide a marked-up plan locating the deviations. The Contractor shall correct any deviations to the satisfaction of the Engineer and Synthetic Turf Installer.
- B. The compaction of aggregate base shall be 95% to Standard Proctor and surface tolerances shall not exceed 0.25" over 10'.
- C. The Contractor shall have a state registered surveyor conduct an elevation survey of the area in a 25' grid to determine and verify that subgrade elevations and slopes are within previously specified tolerances. This elevation survey may require further verification of smaller areas within the 25' grid if determined necessary by the Engineer.
- D. When any or all corrective procedures have been completed, the finished sub-base surface must be re-inspected, with the same representatives attending as the initial inspection. If required, additional repair and inspections are to be conducted until the sub-base surface is deemed acceptable by the Engineer and Synthetic Turf Installer
- E. Once the sub-base surface has been deemed acceptable, the Contractor shall submit a written certificate indicating the acceptance of:
 - 1. The sub-base construction finished surface as totally suitable for the application of the selected synthetic turf system, and
 - 2. The sub-base construction as totally suitable for work under this section to proceed with the final installation and fully warrant the athletic surface installation for the period and conditions specified herein.

3. Commencement of work under this section shall constitute acceptance of the work completed under other sections by the Contractor, acceptance of dimensions of the sub-base, and hence, no claims for extra work based upon these conditions will be permitted.

1.9 ENVIRONMENTAL CONDITIONS

- A. Install synthetic turf surfacing only when ambient air temperature is 35° F or above and the relative humidity is below 35% or as specified by the product manufacturer. Installation will not proceed if rain is imminent.
- B. Install product only when prepared base is suitably free of dirt, dust, and petroleum products, is moisture free and sufficiently secured to prevent unwanted pedestrian and vehicular access.
- C. Maintain all benchmarks, monuments, and other reference points. If disturbed or destroyed, replace as directed.
- D. Adjacent streets, sidewalks, and property shall be kept free of mud, dirt, or similar nuisances resulting from earthwork operations.

1.10 QUALITY CONTROL

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section. The Turf Manufacturer:
 1. Basis of design shall be "GT Impax 87 oz" synthetic turf system as provided by GameTime. (800) 235-2440 www.gtimpax.com
 2. Materials other than those listed must be approved 15 days prior by written addendum. Materials from non-approved manufacturers will not be accepted.
 3. Must be experienced in the manufacturing of tall pile synthetic infill turf systems with the same fiber as specified.
 4. Manufacturer must be a member in good standing with the STC.
 5. Manufacturer must utilize best practices as certified by ISO-9001 and ISO-14001.
 6. Manufacturer must be owned and operated in the U.S.A.
 7. Manufacturer must have no periods of insolvency over the last 25 years.

- B. Installer Qualifications: Company specializing in performing the work of this section.
 - 1. The Synthetic Turf Installer must provide competent workmen skilled in this type of synthetic turf installation. All technicians must have installed similar synthetic turf.
- C. Prior to the beginning of installation, the Synthetic Turf Installer shall inspect the subbase. The installer will accept the sub-base in writing when the general contractor provides test results for compaction, planarity and permeability that are in compliance with the synthetic turf manufacturer's recommendations and as stated herein.
- D. Remove defective work, whether the result of poor workmanship, defective products or damage, which has been rejected by the Engineer as unacceptable. Replace defective work in conformance with the contract documents.

1.11 SUBMITTALS:

- A. Submit the following with Proposal:
 - 1. Submit the exact product name/description as well as the name and location of the manufacturers and suppliers of each component. Manufacturers and suppliers must not be changed after the contract is awarded unless approved by the Owner in writing. Items to be submitted include but are not limited to the following:
 - a. Synthetic Turf product data
 - b. Synthetic Turf adhesive and tape per manufacturer's recommendations
 - c. Synthetic Turf infill product data
 - d. Headerboard at Curved Curbs
 - e. Headerboard at Straight Curbs
 - f. 1/2" x 4-1/4" Stainless Steel Red Head Wedge Anchors
 - 2. Product Literature:
 - a. Submit two copies of manufacturer's recommended installation and maintenance information, including any technical criteria for evaluation of the installed product. Descriptions of all equipment recommended for the maintenance and repair of turf product, as well as a list of any activities not recommended relative to the warranty.
 - b. A letter and specification sheet certifying that the products of this section meet or exceed specified requirements.

3. Certified copies of independent (third-party) laboratory reports on ASTM tests as follows:
 - a. Pile Height, Face Width & Total Fabric Weight, ASTM D418 or D5848
 - b. Primary & Secondary Backing Weights, ASTM D418 or D5848
 - c. Tuft Bind, ASTM D1335
 - d. Grab Tear Strength, ASTM D1682 or D5034
4. ASTM test submittals may vary by no more than 0.25" and 6 oz. of the specified
5. product to bid. Bid winner must show NEW ASTM TESTS with contract submittals.
6. Name and experience of the designated supervisory personnel assigned to this project shall be submitted with the proposal. Changes to this assignment after contract can only be made if approved in writing by the Owner. Include a listing of other on-site personnel and their experience.
7. The Synthetic Turf Installer and Turf Manufacturer shall provide evidence that the turf system does not violate any other manufacturer's patents, patents allowed or patents pending.
8. Certificate of Compliance:
 - a. Submit manufacturer's certificate of product compliance.
9. Certificate of qualifications of installer:
 - a. Submit copy of manufacturer issued installation certification.
10. Maintenance Instructions:
 - a. Submit manufacturer's maintenance instructions.
11. Warranty:
 - a. Submit manufacturer's standard warranty.

1.12 WARRANTY

- A. The Contractor shall provide a minimum eight-year warranty policy by the manufacturer, against defects in materials and one year against defects in the workmanship. Defects shall include, but not be limited to ultraviolet ray fading, degradation, or excessive wear of fiber.
- B. Warranty shall be for full replacement of any damaged product within the warranty period. Warranty shall be comprehensive and sufficient to replace all turf if necessary.
- C. Warranty shall become effective from the date of substantial completion.
- D. Warranty shall contain no usage limits for warranted turf.
- E. Submit Manufacturer Warranty and ensure that forms have been completed in
- F. Owner's name and registered with Manufacturer.

PART 2 - PRODUCTS

2.1 SUPPLIER QUALIFICATIONS

- A. The Owner has conducted an extensive review of synthetic turf products, including visiting installed sites and review of other agencies' review criteria. Based upon their research, they have established the following criteria for acceptance of a synthetic turf product. No variation from these criteria shall be allowed. The Owner's review is considered final.
- B. The Synthetic Turf Installer shall have minimum experience of at least five years, actively selling, installing and maintaining in-fill synthetic turf project of similar size.
- C. The Synthetic Turf Installer must provide a list of references based on previous installations.
- D. Installation team shall be established, insured installation firm experienced as a premium turf installer with suitable equipment and supervisory personnel, with a minimum of 5 years' experience with 15-foot-wide tufted materials.

2.2

2.3 TURF SYSTEM

- A. Playground Synthetic Turf: GT Impax – 87 oz Synthetic Turf, ProPlay Elite 929
 - 1. Manufacturer: Controlled Products
 - 2. As Distributed by: GameTime (800) 235-2440
 - 3. Location used: Playground Area
 - 4. Local Representative: Leo Seavey, Gametime MRC
 - a. Phone: (415) 246-9022
 - b. Email: lseavey@mrcrec.com
- B. Turf Fiber:
 - 1. The turf fiber must be tufted to the backing with a minimum tuft bind of 10 pounds.
 - 2. The tufted fiber weight shall be a minimum of 60 ounces per square yard.
 - 3. The turf fiber shall be non-abrasive and a minimum of 100 microns thick.
 - 4. The turf fiber must contain less than 100 ppm of lead chromate in all colors.
 - 5. The turf fibers must be from the same dye lots.

6. The turf fibers must be guaranteed for a period of eight years not to fade or fail (as distinguished from a change in texture) or have a pile height decrease to 50% of pile height as result of UV degradation.
7. The turf fiber must retain a minimum of 75% of its original fibril width after 10,000 cycles on the Lisport Studded Roll Test Machine.
8. The pile fiber shall possess the following characteristics:

Characteristic	Value	Test
Linear Density (Denier)	13600	ASTM D 1577
Yarn Thickness	100 Microns (PE mono); 100 Microns (PP)	ASTM D 3218
Tensile Strength	71 N (PE Mono); 16 N (PP)	ASTM D 2256
Pile Weight*	60 oz./yd ²	ASTM D 5848
Fiber manufacturer must be from the same source		
The above specifications are nominal. *Values are +/- 5%.		

9. The pile fabric shall possess the following physical characteristics:

Characteristic	Value	Test
Finished Pile Height*	1.25" (31.75mm)	ASTM D 5823
Product Weight (total)*	87 oz./yd ²	ASTM D 3218
Primary Backing Weight*	7.4 oz./yd ²	ASTM D 2256
Secondary coating Weight**	20 oz./yd ²	ASTM D 5848
Fabric Width	15' (4.57m)	ASTM D 5793
Tuft Gauge	3/8"	ASTM D 5793
Grab Tear Strength	200-1b-F	ASTM D 5034
Tuft Bind	>10-1b-F	ASTM D 1335
Infill (Sand)	2 lbs Silica Sand	None
Except where noted as a minimum, the above specifications are nominal.		
* Values are +/- 5%. **All values are +/- 3 oz./yd ² .		

C. Backing Material

1. Primary Backing:
 - a. Primary backing must be a dual layered woven polypropylene material.
 - b. Primary backing system weight must be a minimum of 7.0 ounces/square yard.

2. Secondary Backing:

- a. Secondary backing system weight must be a minimum of 20 ounces/ square yard.
 - 1) Secondary backing shall saturate the primary backing and effectively lock the fiber tufts in place to the primary backing.
 - 2) Secondary backing must be a heat activated polyurethane coating with
 - 3) no vegetable-based polyols.
 - 4) Secondary backing system shall have minimum tuft bind strength of 10 pounds.
 - 5) Secondary backing must have drainage perforations: 3/16" to 1/4" diameter at 4 inches or less on center each way. Non-perforated backing is not acceptable.

D. Turf roll seams:

- 1. Seams to be sewn or glued on site so that no openings larger than the porous backing mat openings are created. All turf fabric edges to be securely bound as per the perimeter detail design. Adhesives for joining seams of turf together shall be Nordot 34G Glue, Mapei 2K, Turf Claw, hot melt technology or equivalent. No substitutions.

E. Fabric surface:

- 1. Fabric surface shall be constructed and installed in minimum widths of 15 feet with no longitudinal or transverse seams.

F. The entire system shall be resistant to weather, including ultra-violet light and heat degradation; insects, rot, mildew and fungus growth and be non-allergenic and non- toxic.

G. The turf material shall be non-combustible and pass the DIN standard pill burn test or ASTM D 2859.

2.4 SYNTHETIC GLUE MATERIAL

- A. Adhesive products shall be Nordot 34G, Mapei 2K, Turf Claw, hot melt technology or equivalent as approved by the Engineer.
- B. Any adhesive products required for the installation of a proposed turf system shall be purpose-suited to the system. The material and application methods shall be as recommended by the adhesive manufacturer.
- C. Disposal of adhesive containers and unused adhesives as well as any fees resulting from such disposal shall be the responsibility of the Contractor.

2.5 INFILL MATERIAL

A. Envirofill:

1. Infill for synthetic/artificial turf this product consists of silicon dioxide coated with an acrylic polymer. HAZARDS DISCLOSURE: This product does not contain known hazardous materials in reportable levels as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200. This product should be classified as NOT being toxic, corrosive, skin/eye irritants, or a strong sensitizer as defined in 16 CFR 1500.3(b)(5), and 1500.3(b)(7) – (9) of the Federal Hazardous Substances Act.
 - a. Color – green, tan, red, black
 - b. Odor – Odorless
 - c. pH-value - Not applicable.
 - d. Change in condition - Melting point/Melting range: 1713 °C (3115 °F); Boiling point/Boiling range: 2230 °C (4046 °F)
 - e. Flash point - None
 - f. Flammability (solid, gaseous) - Product is not flammable.
 - g. Ignition temperature - Decomposition temperature - Not determined.
 - h. Auto igniting - Product is not self-igniting.
 - i. Danger of explosion - Product does not present an explosion hazard.
 - j. Explosion limits - Lower - Not determined; Upper - Not determined.
 - k. Vapor pressure @ 1732 °C (3150 °F) - 13.5 hPa (10 mm Hg)
 - l. Density @ 20 °C (68 °F) - 2.9-3.1 g/cm³ (24.201-25.87 lbs/gal)
 - m. Bulk density - 110 (lbs per cu ft)
 - n. Relative density - Not determined.
 - o. Vapor density - Not applicable.
 - p. Evaporation rate - Not applicable.
 - q. Solubility in / Miscibility with: Water - Insoluble.
 - r. Partition coefficient (n-octanol/water) - Not determined.
 - s. Viscosity: Dynamic - Not applicable; Kinematic - Not applicable.
 - t. Solvent content: Organic solvents - 0.0 %; Solids content - 100.0 %
 - u. Other information: No further relevant information available.

2.6 CUSHION LAYER

- A. Synthetic Turf Surfacing is to be installed over Poured-In-Place Rubber Surfacing, refer to specification section 32 18 16.16 Playground Protective Surface Under Synthetic Turf.

2.7 PERIMETER SECURING

A. Nailing Board:

1. At Curved Curbs: Recycled plastic nominal 2" by 4" continuous Bend-a-Board or equal.
2. At Straight Curbs: Install pressure treated 2" by 4" headerboard.

B. Concrete Perimeter Curb: Refer to 32 10 00 Concrete Work

2.8 AGGREGATE BASE ROCK

A. Bottom rock:

1. Class II Aggregate Base per Caltrans Standard Specifications, or Local Municipality.

PART 3 - EXECUTION

3.1 GENERAL

- A. Installation of the synthetic turf system is to comply with the Manufacturer's recommendations, requirements and the reviewed and approved shop drawings.
- B. Perform all work in strict accordance with the contract documents and the manufacturer's specifications and instructions. Only those skilled technicians proposed in the bid phase are to be assigned to this project by the Contractor.
- C. The designated Supervisor for the Synthetic Turf Installer must be present during any and all construction activity associated with the field installation, including testing, cleanup and training.
- D. All products and equipment are to be from sources approved by the authorized turf manufacturer and conform to the specifications.

3.2 PRODUCT DELIVERY, STORAGE & HANDLING

- A. Deliver products to site in original containers and wrappers as agreed between the Engineer and Contractor. Inspect products upon delivery for damage.
- B. Store products in a location and in a position, that protects them from crush damage or any other defects.
- C. Handle and store (on and off site) all materials safely to ensure their physical properties are not adversely affected and that they are not subject to vandalism or damage.
- D. Infill shall arrive dry and loose.
- E. Adhesives shall arrive in dry, sealed containers.

3.3 BOTTOM ROCK

- A. The specified bottom rock shall be carefully placed and compacted over the subgrade and/or drain pipe to the grades and elevations shown on the drawings. If the thickness of the planned bottom rock exceeds 6 inches, the rock shall be placed in horizontal layers not exceeding 6 inches and each layer compacted to 92 percent relative compaction with a vibratory smooth drum roller.
- B. Should any segregation of the material occur, during any stage of the stockpiling, spreading or grading, the Contractor shall immediately remove and dispose of segregated material and correct or change handling procedures to prevent any further separation.
- C. Finished surface shall be proof rolled to 92 percent relative compaction with a vibratory smooth drum roller to provide a non-yielding, smooth, flat surface.
- D. Final bottom rock grades shall conform to the lines and grades shown on the drawings. The measured grades shall not deviate more than 0.08 feet from the planned grades and not vary more than 0.04 feet in 10 feet in any direction. Laser grading is recommended.
- E. The top surface of the bottom rock shall be sloped as shown on the drawings.
- F. Bottom rock grades shall be completed by the Contractor and inspected by the Owner prior to commencing with the subsequent work items.

3.4 CUSHION LAYER INSTALLATION

- A. Synthetic Turf Surfacing is to be installed over Poured-In-Place Rubber Surfacing, refer to specification section 32 18 16.16 Playground Protective Surface Under Synthetic Turf.

3.5 PERIMETER NAILER INSTALLATION

- A. Install recycled plastic perimeter nailer board in concrete band, ¼" below concrete finished surface. Secure in place with expansion bolts spaced 24" o.c.

3.6 TURF INSTALLATION

- A. Install synthetic turf system in accordance with the Manufacturer's written installation instructions.
- B. Turf shall be attached to the perimeter edge as shown in the construction plans and as per the manufacturer.
- C. All seams shall be brushed thoroughly before infill materials are installed.
- D. All terminations shall be as detailed and approved in the shop drawings.

3.7 INFILL INSTALLATION

- A. The synthetic turf shall be thoroughly brushed prior to installation of infill materials to remove wrinkles.
- B. Turf shall remain free draining at all times before, during and after the infill materials are installed.

3.8 POST INSTALLATION QUALITY CONTROL

- A. After-Installation Inspection:
 - 1. Provide third party inspection of playground safety surfacing within 30 days of installation.
 - 2. Conduct inspection by National Recreation and Parks Association/National Playground Safety Institute (NRPA/NPSI) Certified Playground Safety Inspector (CPSI).
 - 3. Determine compliance with this Specification and Drawings and make corrections as necessary to obtain written certification of compliance with this Specification and Drawings.

4. Post Installation Test: ASTM F1292 Field Test Method

- a. Perform impact attenuation testing according to ASTM F1292 filed test method in presence of Owner's representative within 30 days of installation.

- 1) Confirm Impact Attenuation Performance of Playground Tile System:

g-max Score:	Less than 125
Head Injury Criteria (HIC) Score:	Less than 700

- b. Operator Qualifications:

- 1) Trained in the proper operation of test equipment by competent agency.

- c. Determine compliance with ASTM F 1292, unless otherwise specified in this section.

5. The contractor is responsible for hiring a Third-Party Certified Playground Inspector (CPSI), not employed by the installer. The contractor shall obtain sign-off from the third-party CPSI ensuring that all areas of the Playground Protective Surfacing System meet the current national standards set by the American Society for Testing and Materials (ASTM) and U.S. Consumer Product Safety Commission (CPSC), by said CPSI before the play structure is open for use.

3.9 CLEANING AND COMPLETION

- A. Protect all installed work from other construction activities as installation progresses.
- B. The Contractor shall keep the area clean throughout the construction period and free from the installation process, including track surfaces.
- C. Upon completion of the installation, thoroughly clean surfaces and site of all refuse resulting from the installation process, including track surfaces.
- D. Any damage to existing fixtures or facilities resulting from the installation of the synthetic turf system shall be repaired to original condition at the Contractor's expense prior to Substantial Completion and commencement of the Warranty Period.
- E. A deficiency list will be produced by the Engineer at the conclusion of the project. All installation project deficiencies not in dispute must be remedied by the Contractor prior to the issuance of a certificate of Substantial Completion.
- F. Contractor to provide a written acceptance by the Turf Manufacturer that the turf and base system is installed in accordance with their recommendations prior to final completion.

3.10 FIELD QUALITY CONTROL

- A. The contractor is responsible for hiring a Third-Party Certified Playground Inspector (CPSI), not employed by the installer. The contractor shall obtain sign-off from the third-party CPSI ensuring that all areas of the Synthetic Resilient Surfacing System meet the current national standards set by the American Society for Testing and Materials (ASTM) and U.S. Consumer Product Safety Commission (CPSC), by said CPSI **before the play structure is open for use.**

3.11 CLOSE-OUT

- A. Contractor shall provide Owner's Representative with written certification of installation by Third-Party Certified Playground Safety Inspector.

END OF SECTION 32 18 16
(Revised 1/31/2024)

SECTION 32 18 16.16
PLAYGROUND PROTECTIVE SURFACING

PART 1 - GENERAL

1.1 POURED-IN-PLACE RUBBER PLAYGROUND SURFACING

- A. GTImpax Recycled Poured in place playground surfacing shall consist of a polyurethane binder mixed with recycled rubber, which will make up the attenuation cushion layer. The attenuation cushion layer is capped with EPDM or TPV granules, mixed with a polyurethane binder creating the Wear Course. The system is mixed and field-applied in any configuration and dimensions to achieve required critical fall heights.
- B. The top layer of EPDM or TPV rubber granules (wear course) is omitted when used beneath synthetic turf surfacing.

1.2 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to the work of this section.
- B. Also reference the following specification sections:

- 1. 32 13 13.1 Concrete Work (Landscape).
- 2. 32 18 16 Synthetic Resilient Surfacing

1.3 DESCRIPTION OF WORK:

- A. Furnish labor, material, and equipment necessary to install the poured-in-place, resilient surfacing system as shown on the drawings and specified herein.
 - 1. Work shall include, but not be limited to the following: layout; excavation; backfill; furnishing and installing of base material; furnishing and installing of poured-in-place, resilient surfacing and all other incidental work to provide a complete resilient surfacing system.
 - 2. Poured in place playground surfacing shall consist of a polyurethane binder mixed with recycled rubber, which will make up the attenuation cushion layer. The attenuation cushion layer is capped with EPDM or TPV granules, mixed with a polyurethane binder creating the Wear Course.

3. Surfaces shall comply with ADA and CPSC guidelines as well as ASTM Standards. Manufacturer is to be certified by IPEMA, a third-party testing organization for playground surfaces and equipment.

1.4 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM International
2. ASTM D2047- Standard test method for determining the static coefficient of friction of ceramic tile and other like surfaces by the horizontal dynamometer pull meter method. This standard replaces ASTM C1028.
3. ASTM D412 – Standard test methods for vulcanized rubber and thermoplastic rubbers and thermoplastic elastomers-tension.
4. ASTM D624 - Standard test method for tear strength of conventional vulcanized rubber and thermoplastic elastomers.
5. ASTM D2859 – Standard test method for flammability of finished textile floor covering materials.
6. ASTM E303 – Standard test method for measuring surfacing frictional properties using the British Pendulum tester.
7. ASTM F1292-18 – Standard specification for impact attenuation of surface systems under and around playground equipment.
8. ASTM F1951 – Standard specification for determination of accessibility of surface systems under and around playground equipment.

B. US Consumer Product Safety Commission (CPSC) Handbook for Playground Safety.

1.5 SPECIFIC DEFINITIONS

- A. Critical Fall Height: Standard measure of shock attenuation. According to the United States Consumer Product Safety Commission Public Playground Safety Handbook, critical fall height is defined as “the fall height below which a life-threatening head injury would not be expected to occur.”
- B. Fall Height: According to the United States Consumer Product Safety Commission Public Playground Safety Handbook, fall height is defined as “the vertical distance between the highest designated play surface on a piece of equipment and the protective surfacing beneath it.” The fall height of playground equipment should not exceed the critical height of the protective surfacing beneath it.

1.6 SUBMITTALS:

- A. The Contractor shall submit a complete set of the material submittals, as required, including manufacturer's name and address, specific trade names, catalog and model numbers, illustrations and descriptive material, and samples of the proposed material for this project clearly marked as to proposed items for approval by the Owner's representative.
- B. Products submitted as equal must include hard copies of manufactures written specifications, warranty, purchase and use of materials.
- C. Manufacturer's descriptive data and installation instructions.
- D. Manufacturer's details showing depths of wear course and sub-base materials, anchoring systems and edge details.
- E. Upon request, a listing of at least five installations where products similar to these proposed for use have been installed and have been in service for a minimum period of three years. The list shall include owner or purchaser, address of installation, date of installation, contact person, and phone number.
- F. A signed statement by an authorized official certifying that the surfacing system meets the requirements of ASTM F1292-18, section 15 for a head-first fall from the highest accessible portion of the specified playground equipment.
- G. A signed statement from the manufacturer of the poured in place surfacing attesting that all materials under this section shall be installed only by the Manufacturer's Trained Installers.
- H. A Certificate of Insurance shall be provided by the Manufacturer for poured in place surfacing for use as playground safety surfacing, covering general and product liability, of not less than \$1,000,000 for each occurrence, \$2,000,000 general aggregate, with an excess/umbrella liability of \$25,000,000. The issuing underwrite shall be AA rated.
- I. IPEMA Certification mandatory

1.7 Delivery, Storage and Handling:

- A. Materials and equipment shall be delivered and stored in accordance with the manufacturer's recommendations.

1.8 Project Site Conditions:

- A. Poured in Place surfacing must be installed on a dry sub-surface, with no prospect of rain within the initial drying period, and within the recommend temperature range of the manufacturer. Installation in weather condition of extreme heat, cold (less than 55°F), and/or high humidity may affect cure time, and the structural integrity of the final product. Immediate surrounding sites must be reasonably free of dust conditions or this could affect the final surface look.

1.9 Sequencing and Scheduling:

- A. Poured in Place surfacing shall be installed after all playground equipment, shade structures, signs and any other items that will be within the surfacing area. Coordinate with General Contractor.
- B. Surface installation coordinated by manufacturer representative.

1.10 Warranty:

- A. Poured in Place surface shall maintain required impact attenuation characteristics and be guaranteed against defects in workmanship AND material for a limited five-year period or as specified and agreed upon per alternate contract. Warranty will be specific to maintenance requirements and performance standards of completed product. Warranty is void if not installed by Manufacturers Trained and Certified Poured in Place Surfacing Installers.

1.11 Testing:

- A. NOTE: Critical Fall Height Four feet through 10 feet have been tested in accordance with Section 15 – Critical Fall Height Test Procedure of ASTM F1292-18.

PART 2 - PRODUCTS

- 2.1 Safety surfacing shall consist of both recycled and synthetic materials meeting the requirements of this specification.

2.2 PRODUCT SCOPE

- A. Poured in Place Surface: The poured in place surface shall consist of recycled rubber mixed with a polyurethane binder, then capped with EPDM or TPV granules mixed with an aliphatic binder or aromatic binder.
- B. It shall consist of a uniform material manufactured in such a way that the top portion meets the requirements specified herein for wear surface.

- C. The type of safety surfacing shall be a poured-in-place system and shall be indicated on the drawings.

2.3 ATTENUATION CUSHION LAYER SECTION

- A. Impact attenuation cushion layer consists of these materials; recycled styrene butadiene rubber (SBR) and/or cryogenic crumb rubber and/or pre consumer postindustrial reclaimed scrap rubber adhered with a 100% solids polyurethane binder to form a resilient porous material.
- B. Strands of SBR may vary from 0.5 mm – 2.0 mm in thickness by 3.0 mm – 20 mm in length.
- C. Chunk Premium Black Rubber Granules are 5/8" granules: This rubber is pre-consumer, post-industrial, reclaimed rubber, granulated through a 5/8" screen and contains less than 2% dust.
- D. SBR Crumb Rubber (5-9 Mesh) using sieve analysis ASTM D5644 with a fiber content of .1% or less mixed in.
- E. Binder shall be between 7-12% of the total weight of the material and shall provide 100 % coating of the particles.
- F. The attenuation cushion layer shall be compatible with the wear course and must meet requirements herein for impact attenuation.

2.4 WEAR COURSE

- A. **Omit wear course where pour-in-place rubber protective surfacing is installed beneath Synthetic Turf Surfacing. Refer to project details for more information.**
 - 1. Refer to specification 32 18 13 Synthetic Grass Surfacing and/or specification 32 18 16 Synthetic Resilient Surfacing for Synthetic Turf Surfacing used as top layer.
- B. The EPDM wear course shall consist of Ethylene Propylene Diene Monomer. The TPV wear course shall consist Thermal Plastic Vulcanized granules both shall be mixed with polyurethane binder formulated to produce an even, uniform, seamless surface. Installation of surfacing shall be seamless (unless otherwise agreed upon by owner).
- C. EPDM or TPV shall be peroxide cured with a EPDM or TPV content of 26% and shall include a processing aid to prevent hardness with 26% poly content to maintain dynamic testing characteristics, weatherization and UV stability or TPV granules.
- D. ASTM D2240 (Shore A) hardness of 55-65, not less than 26 percent rubber hydrocarbons.

- E. Size of EPDM or TPV granules shall be 1-4mm across. Binder shall be not less than 20% of total weight of rubber used in the wear surface and shall provide 100% coating of the particles.
- F. Thickness of wear course shall be a minimum .5" (12.7 mm).
- G. The wear course shall be porous.

2.5 BINDER

- A. No Toluene Diphenyl Isocyanate (TDI) shall be used.
- B. No filler materials shall be used in urethane such as plasticizers and the catalyzing agent shall contain no heavy metals.
- C. Weight of polyurethane shall be no less than 8.5 lbs. /gal (1.02 Kg/1) and no more than 9.5 lbs. /gal (1.14 Kg/1).
- D. Manufacturer is permitted to modify the type of urethane required to match extreme weather conditions. Substitutions must be equal to or exceed original quality.

2.6 GT IMPAX ADVANTAGE INSERTS

- A. Insert – Thermal Plastic Vulcanized angular granules with a (Shore A) hardness of 65° A ± 5 and particle size between .5-1.5 mm shall be used.
- B. Thickness of the Insert shall be .5"
- C. Insert shall be porous.
- D. Aromatic or aliphatic urethane to be used as a binder.
- E. Location –Insert to be installed under swings, swing bays, slide exits (unless otherwise noted in drawings). Customer to approve location of wear mat inserts.
- F. Standard Color .5-1.5mm to be used. Colors include four standard colors: Terra Cotta Red, Blue, Green, and Beige.
- G. Size: Swing bay use locations shall have TPV Inserts inclusive of all outside bay structure poles. Singular swings and slide exits shall be 4'x4'x.5" in thickness.

2.7 MATERIALS

- A. The playground surface shall consist of synthetic materials meeting the requirements of this Specification. The type or safety surfacing shall be poured-in-place safety surfacing system GT Impax, available through Gametime MRC.

1. Local Representative: Leo Seavey, Gametime MRC

- a. Phone: (415) 246-9022
b. Email: lseavey@mrcrec.com

- B. Wear Course - EPDM or TPV Granules

1. Manufacturers: Soflex Rubber and Urethane Sdn. Bhd.
Nantong Hongfei Rubber Products Co. LTD
Rosehill Polymers
2. As Distributed by: GT Impax (800) 235-2440
3. Location Used: Playground Area

- C. Attenuation cushion layer – GT Impax Shredded and/or Chunk Rubber

1. As Distributed by: GT Impax (800) 235-2440
2. Location Used: Playground Area
3. Base Thickness: May vary as determined by the fall height of the play equipment and as required to meet ASTM F1292 requirements for critical fall height.

Critical Play Height of Equipment	Base Thickness **
Up to 4'	2"
Up to 5'	2.5"
Up to 6'	3"
Up to 8'	3.75"
Up to 10'	4.5"
Up to 12'	5"

*****ADD .5" Top Coat for Total System Thickness.**

- D. Binder – Aromatic VORAMER MR Products

1. Manufacturer: DOW Chemical
2. As Distributed by: GT Impax (800) 235-2440
3. Location Used: Playground Area

- E. Binder – Aromatic Urethane Stobielast® S 1020

1. Manufacturer: Stockmeier Urethanes, USA, Inc.
2. As Distributed by: GT Impax (800) 235-2440
3. Location Used: Playground Area

F. Binder – Aliphatic Urethane Premium, Non-Ambering

1. Manufacturer: Accella Polyurethane Systems
2. As Distributed by: GT Impax (800) 235-2440
3. Location Used: Playground Area

G. Chunk Premium Black Rubber Granules

1. Manufacturer: American Recycling Center, Inc. (989) 725-5100
655 Wabassee Drive
Owosso, MI 48867
2. As Distributed by: GT Impax (800) 235-2440
3. Location Used: Playground Area

PART 3 - EXECUTION

3.1 SITE PREPARATION

- A. Finished Grade/Slope: Verify that finished elevations or adjacent areas are as indicated on the architectural or site plans, that the appropriate sub-grade elevation has been established for the safety surface to be installed, and that the subsurface has been installed per architectural, site or equipment plans while meeting accessibility and use zones requirements.
- B. Aggregate Sub Base: Tolerance of aggregate sub-base shall be within .5" in depth. Verify that aggregate sub-base has been fully compacted. Per ADA Guidelines: compacted Aggregate sub-base – 4" of .75" minus irregular stone with fines compacted to 95% in 2" watered lifts.
- C. Concrete Sub-Base: Tolerance of concrete or bituminous sub-base shall be with .125" (3.0 mm) in 10' (3050 mm). Per ADA Guidelines: Concrete a minimum of 3' – 4' at a minimum 2500 PSI. Concrete must cure for 7 days prior to application of attenuation cushion layer. Concrete must cure 21 days if wear course is to be applied directly to concrete surface. If poured in place surfacing is installed, verify that the concrete sub- base has cured (all areas appear white in color usually at 7 days) and that all concrete curing compounds and other deleterious substances that might adversely affect adhesion have been removed. Surface shall be clean and dry.
- D. Drainage: Verify that sub-surfacing drainage, if required, has been installed to provide positive drainage.

3.2 INSTALLATION

- A. Poured in Place Surfacing: Components of the poured in place surfacing shall be mixed on site in a rotating tumbler to ensure components are thoroughly mixed and are in accordance with manufactures recommendations. Installation of surfacing shall be seamless up to 2,000 square feet per day. Material shall cover all foundations and fill around all elements penetrating the surface.
- B. Attenuation Cushion Layer: Whenever practical, attenuation cushion layer of surfacing material shall be installed in one continuous pour on the same day of up to 2,000 square feet. When a second pour is required, step the seam (see detail) and fully coat the step of the previous work with polyurethane binder to ensure 100% bond with new work. Apply adhesive in small quantities so that new attenuation cushion layer can be placed before the adhesive dries.
- C. Wear Course: Wear course must be quality peroxide cured EPDM granules or TPV granules. Wear surface shall be bonded to attenuation cushion layer. If necessary, additional primer will be used between the attenuation cushion layer and wear course. Apply adhesive to attenuation cushion layer in small quantities allowing the wear course to be applied before adhesive dries. Surface shall be hand troweled to a smooth, even finish. Expect continuous and seamless up to 2,000 square feet per day (contact sales representative for seamless in excess of 2,000 square feet). Where seams are required due to color change, size or adverse weather, a step configuration will be constructed to maintain wear course integrity. The edge of initial pour shall be coated with adhesive and wearing surface mixture shall be immediately applied. Pads with multiple seams are encouraged to include a topcoat of urethane before being placed into use. Butt joint seams are not acceptable except for repairs. Under special conditions and with Owners written approval seams may be permitted in same color pad. Consult with Manufacturer for specific applications.
- D. Perimeter: For installations over existing concrete, the perimeter shall be saw cut to provide a keyway 1" deep x 1" wide, or formed during the pour, with surfacing rolled down into the void. Primer adhesive must be applied to all sides of the void. When connecting to a concrete curb or border, the inside vertical edge shall be primed with adhesive and the final 2" of the attenuation cushion layer shall be tapered to allow the wear surface material to be 1.5"– 2" thick where it joins the concrete.
- E. Thickness: Construction methods such as the use of measured screeds or guides shall be employed to ensure that the full depth of specified surfacing material is installed. Surfacing system thickness throughout the playground equipment use zone shall be as required to meet the impact attenuation requirements specified herein.

- F. Clean Up: Manufacturer installers shall work to minimize excessive adhesive on adjacent surfaces or play equipment. Spills of excess adhesive shall be promptly cleaned.
- G. Protection: The safety surface shall be allowed to fully cure in accordance with Manufacturer's instructions. The surface shall be protected by the owner from all traffic during the curing period of at a minimum of 48 hours or as instructed by the Manufacturer.
- H. Manufacturer Services: For poured in place safety surfacing, a Manufacturer's representative who is experienced in the installation of playground safety surfacing shall be provided. The representative shall supervise the installation to ensure that the system meets the impact attenuation requirements as specified herein.

3.3 PROTECTION

- A. Protect playground safety surfacing from foot traffic for a minimum of 48 hours after installation, more if necessary, to allow surfacing to fully cure.
- B. Protect completed play surfacing from damage during construction.

3.4 SITE AREA CLEAN UP

- A. The site shall be kept clean and free of tools, trash, and debris and installation materials daily. Products may be stored on site during installation with appropriate protective measures and approval by the Owner's representative.
- B. Remove adhesive spills from playground safety surfacing, adjacent paving and playground equipment in accordance with manufacturer's instructions.
- C. Clean safety surfacing in accordance with manufacturer's instructions.
- D. Protect all installed work from other construction activities as installation progresses.
- E. The Contractor shall keep the area clean throughout the construction period and free from the installation process, including track surfaces.
- F. Upon completion of the installation, thoroughly clean surfaces and site of all refuse resulting from the installation process, including track surfaces.
- G. Any damage to existing fixtures or facilities resulting from the installation of the playground protective surfacing system shall be repaired to original condition at the Contractor's expense prior to Substantial Completion and commencement of the Warranty Period.

- H. A deficiency list will be produced by the Engineer at the conclusion of the project. All installation project deficiencies not in dispute must be remedied by the Contractor prior to the issuance of a certificate of Substantial Completion.

3.5 FIELD QUALITY CONTROL

A. After-Installation Inspection:

1. Provide third party inspection of playground safety surfacing within 30 days of installation.
2. Conduct inspection by National Recreation and Parks Association/National Playground Safety Institute (NRPA/NPSI) Certified Playground Safety Inspector (CPSI).
3. Determine compliance with this Specification and Drawings and make corrections as necessary to obtain written certification of compliance with this Specification and Drawings.

4. Post Installation Test: ASTM F1292 Field Test Method

- a. Perform impact attenuation testing according to ASTM F1292 filed test method in presence of Owner's representative within 30 days of installation.

1) Confirm Impact Attenuation Performance of Playground Tile System:

g-max Score:	Less than 125
Head Injury Criteria (HIC) Score:	Less than 700

b. Operator Qualifications:

- 1) Trained in the proper operation of test equipment by competent agency.

- c. Determine compliance with ASTM F 1292, unless otherwise specified in this section.

5. The contractor is responsible for hiring a Third-Party Certified Playground Inspector (CPSI), not employed by the installer. The contractor shall obtain sign-off from the third-party CPSI ensuring that all areas of the Playground Protective Surfacing System meet the current national standards set by the American Society for Testing and Materials (ASTM) and U.S. Consumer Product Safety Commission (CPSC), by said CPSI before the play structure is open for use.

3.6 CLOSE-OUT

- A. Contractor shall provide Owner's Representative with written certification of installation by Third-Party Certified Playground Safety Inspector.

END OF SECTION 32 18 16.16

(Revised 1/31/2024)

SECTION 32 20 00
PAVEMENT MARKINGS AND MARKERS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Materials
- B. Application
- C. Pavement Preparation
- D. Layout and Pre-marking
- E. Line Placement Tolerance
- F. Line Types
- G. Equipment and Application of Painted Traffic Markings

1.02 REFERENCES

- A. CSS- CALTRANS STANDARD SPECIFICATIONS
 - 1. Section 84: Traffic Stripes and Pavement markings
 - 2. Section 85: Pavement Markers

1.03 WORK INCLUDED

- A. Traffic stripes
- B. Parking stripes
- C. Traffic Markings
- D. Traffic Markers

1.04 QUALITY ASSURANCE

- A. All work shall be done to the satisfaction of the San Rafael City Elementary School District.

PART 2 - PRODUCTS

2.01 TRAFFIC PAINT

- A. Paint for traffic stripes and pavement markings shall conform to the follow specifications:
 - 1. Solvent-Borne Traffic Lines (White, Yellow and Black) shall conform to the State of California Specification No. PT - 170A.
 - 2. Waterborne Traffic Lines (White, Yellow and Black) shall conform to the State of California Specification No. 8010 - 20B.
 - 3. Acetone - Based Lines (White, Yellow and Black) shall conform to the State of California Specification No. PT - 150VOC.
 - 4. Waterborne Traffic Lines (Blue - Federal Standard 595b, Color no. 35180) shall conform to Federal Specification No. TT - P - 1952D.

5. Copies of State of California Specifications may be obtained from the California Department of Transportation Laboratory.
6. The kind of paint to be used (solvent borne, water borne, or acetone – based) shall be determined by the Contractor based on the time of year the paint is applied, and local air pollution control regulations.
7. Thinning of the paint will not be allowed
8. The Contractor shall submit a Certificate of Compliance that the paint supplied conforms to the specifications of the state of California's Department of Transportation.

2.02 THERMOPLASTIC MATERIAL

- A. Thermoplastic material shall conform to either State of California Specification 8010 – 01A or 8010 – 19A.
- B. Copies of State of California Specifications may be obtained from the California Department of Transportation Laboratory.

2.03 TRAFFIC PAVEMENT MARKERS

- A. Pavement markers shall conform to one or more of the following types:

1. Type A – Non-Reflective White Markers
2. Type AY – Non-Reflective Yellow Markers
3. Type B – 2-Way Blue Retroreflective Markers
4. Type C – Red-Clear Retroreflective Markers
5. Type D – 2-Way Yellow Retroreflective Markers
6. Type G – One-Way Clear Retroreflective Markers
7. Type H – One-Way Yellow Retroreflective Markers

- B. Non Reflective Markers shall conform to Caltrans Specification 85-1.04A.

- C. Retroreflective Markers shall conform to Caltrans Specification 85-1.05

- D. Adhesives shall conform to one of the following types:

1. Rapid set type epoxy adhesive shall conform to Caltrans Specification 95-2.04
2. Hot melt bituminous adhesive shall conform to the following

Specification	ASTM Designation	Requirement
Flash point COC, °F	D 92	550 min.
Softening Point, °F	D 36	200 min.
Brookfield Thermosel Viscosity, Centipoise, No. 27 Spindle, 20 RPM, 400 °F	D 4402	3,000 – 6,000
Penetration, dmm, 100 g, 5 seconds, 77 °F	D 5	10 – 20
Filler Content, percent by weight (Insoluble in 1,1,1, Trichloroethane)	D 2371	65 – 75

Filler material used in bituminous adhesive shall be Type PC, Grade III, calcium carbonate conforming to the requirements in ASTM Designation : D 1199, and shall conform to the following fineness:

Sieve Size	Percentage Passing
No. 100	100
No. 200	95
No. 325	75

PART 3 - EXECUTION

3.01 General:

- A. This work shall consist of furnishing and applying thermoplastic or solvent borne paint traffic stripes (traffic lines) and pavement markings, including glass beads, and furnishing and placing raised pavement markers at the locations and in accordance with the details shown on the Plans or designated by the Engineer, and as specified in these specifications.
- B. For the purposes of these specifications, traffic stripes (traffic lines) are defined as longitudinal centerlines and lane lines which separate traffic lanes in the same or opposing direction of travel, and longitudinal edge lines which mark the edge of the traveled way or the edge of lanes. Pavement markings are defined as transverse markings which include but are not limited to, word and symbol markings, limit lines (stop lines), crosswalk lines, shoulder markings, parking stall markings, and railroad grade crossing markings. Pavement markers are raised pavement markers, reflectorized or non-reflectorized, of the type and color shown on the Plans, and/or as set forth in theses Specifications.

3.02 Removal of Traffic Stripes, Pavement Markings and Pavement Markers

- A. Where blast cleaning is used for the removal of painted traffic stripes and pavement markings, or for removal of objectionable material, remove the residue, including dust and water, immediately after contact with the surface being treated. Remove by vacuum attachment operating concurrently with the blast cleaning operation.
- B. Where grinding is used for the removal of thermoplastic traffic stripes and pavement markings; remove the residue by means of vacuum attachment to the grinding machine. Do not allow the residue to flow across or be left on, the pavement.
- C. Where markings are to be removed by blast cleaning or by grinding, the removal area shall be approximately rectangular in order that an imprint of the removed marking does not remain on the pavement.
- D. Contractor will be responsible for repairing any damage to the pavement during removal of pavement markers. Damage to the pavement, resulting from removal of pavement markers, shall be considered as any depression 1/4 - inch or greater in depth.

3.03 Temporary Pavement Markers

- A. If permanent pavement markers cannot be installed immediately, and the street or road is to be placed in service, the Contractor shall install short term, temporary pavement markers on the roadway prior to opening the street or roadway to traffic.
- B. Place markers, at a minimum, of 24 feet on center, or as directed by the Engineer or government agency having jurisdiction, in the appropriate colors to delineate centerlines and travel lanes on multi-lane roadways.

3.04 Thermoplastic Traffic Stripes and Pavement Markings

- A. Apply in conformance with the manufacturer’s instructions and the applicable requirements of Section 84-2.04 of Caltrans Standard Specifications (CSS) and Caltrans Standard Plans A20A through A20D, and A24A through A24E.

3.05 Painted Traffic Stripes and Pavement Markings

- A. Painted Traffic Stripes and Pavement Markings may be used in lieu of thermoplastic in parking lots, and parking stalls.
- B. Painted Traffic Stripes and Pavement Markings shall be applied in conformance with the manufacturer’s instructions and the applicable requirements of Section 84-3.03, 3.04 and 3.05 of Caltrans Standard Specifications and Caltrans Standard Plans A20A through A20D, and A24 through A24E.

3.06 Pavement Markers

- A. Pavement markers shall be placed in conformance with the requirements of Section 85-1.06 of the Caltrans Standard Specifications.
- B. Pavement recesses are not required. Markers shall be installed accurately to the line established by the Engineer, or his designated representative. No marker shall be installed until the owner’s Representative has approved the surface.
- C. The Contractor shall provide an experienced technician to supervise the application of the raised pavement markers.
- D. In areas of high traffic volume, the Contractor shall schedule work to apply traffic markers in off-peak hours, or on weekends.
- E. Blue Retro reflective traffic markers shall be used as a roadway location device for fire hydrants. On unstriped roadways, blue markers shall be set in the center of the roadway. On undivided striped roadways, blue markers shall be set 6" to the hydrant side of the center stripe. On divided roadways, the blue marker shall be set 6" to the side of the lane striping that is closest to the hydrant.

3.07 Glass Beads

- A. Furnish glass beads conforming to AASHTO M247, except for gradation to conform to the following:

Sieve	Percent Passing By Weight
Size	For Epoxy For Paint

No. 20	100	100
No. 30	75 - 95	70 - 90
No. 40	—	60 - 80
No. 50	15 - 35	10 - 30
No. 80	—	0 - 3
No. 100	0 - 5	0 - 1

- B. Glass Spheres for reflectorizing traffic paint shall be supplied with a moisture resistant coating.
- C. Glass Beads shall be applied to all traffic striping and pavement markings in the traveled way.
- D. Glass Beads shall be applied at a rate of approximately 6 pounds gallon of applied thermoplastic material.

3.08 Protection

- A. Protect the newly installed traffic stripes, pavement markings, and traffic markers from damage until the material has cured.
- B. Replace any newly installed traffic stripes, pavement markings, or markers that have been marred, broken, misaligned, or otherwise disturbed prior to opening roadway, or parking area to traffic.

3.09 Restoration of Existing Improvements

- A. Existing signs, striping, or other markings damaged due to the installation of new striping or traffic markers shall be replaced in kind at the Contractors expense.

3.10 Surface Conditions

- A. Traffic striping and pavement marking shall be performed only when the surface is dry and when the surface temperature is above 45 degrees F and rising. A lower temperature based on paint manufacturer's printed recommendations may be permitted when approved by the Engineer. Do not paint when wind displaces paint spray or glass beads or when surface is damp.

3.11 Equipment

- A. All equipment for the work shall be approved by the Engineer and shall include the apparatus necessary to properly clean the pavement surface, a mechanical marking machine, and such auxiliary hand-painting equipment as may be necessary to satisfactorily complete the job.

3.12 Layout and Pre-marking

- A. The Contractor shall lay out the locations of all lines, works, and other symbols to assure their proper placement. The layout and Pre-marking lines shall be approved by the Engineer before marking operations are started. When applying longitudinal or transverse lines, the Contractor shall use existing lines, construction joints, or Pre-marking to guide the marking equipment.
- B. Pre-marking shall be located from survey data, or reference points and offset so as to parallel the theoretical edge of the marking lines at a maximum distance of one inch. Templates are required for the layout of arrows, words, and other symbols. Pre-marking for longitudinal lines shall be

placed at 40-foot intervals, shall not exceed two inches in width or 12 inches in length. Pre-marking for auxiliary markings shall be located as shown on the drawings or schematic forms provided by the Engineer.

3.13 Line Placement Tolerance

- A. Pavement marking lines shall be straight or smoothly curved, true to the alignment of the pavement, and shall not deviate laterally from the proper location at a rate of more than two inches in 100 feet. No deviation greater than three inches will be permitted.

3.14 Line Types

- A. Marking materials shall be applied at a minimum rate of 16.5 gallons per mile per four-inch wide stripe, with a 20-mil minimum thickness, and shall, except for parking lot stall markings, be uniformly retro reflective.
- B. All traffic stripes and pavement markings shall be thermoplastic and conform to Caltrans Standard Specification 84-2.0

- END OF SECTION -

**SECTION 32 30 00
HOT MIX ASPHALT**

PART I - GENERAL

1.01 DESCRIPTION

- A. This section applies to all hot mix asphalt (HMA).
- B. Hot mix asphalt shall conform to Section 39, "Asphalt Concrete," of the Standard Specifications and these special provisions.
- C. Asphalt Concrete (AC) and HMA may be used interchangeably on the plans and specifications.
- D. The work to be performed includes the preparation of the aggregate base course, application of tack coat, the production, transporting, placing, compacting of the HMA and all other required incidental work.

1.02 SUBMITTALS

- A. Contractor shall submit HMA source and mix design prepared by a certified laboratory to the Engineer for review and approval.
- B. Accompanying mix design, submit materials certificates signed by material producer and Contractor, certifying that each material item complies with, or exceed, specified requirements.
- C. Contractor shall submit tickets for each load of asphalt concrete.
- D. Submit certificate of compliance for tack coat per Section 94, "Asphaltic Emulsion," of the Standard Specifications.

PART 2 -PRODUCTS

2.01 DESCRIPTION

- A. HMA
 - 1. HMA for the pavement section shall be Type B, placed at least in two layers, 3/8 inch maximum aggregate for the final layer and 3/4 inch maximum aggregate for the bottom layer.
 - 2. HMA for the pathways shall be Type B, 3/8 inch maximum aggregate.
- B. Asphalt Binder shall be Steam-refined paving asphalt Grade PG 64-10 per Section 92 of the Standard Specifications.
- C. Tack Coat shall be applied to the finished surfaces of the aggregate base prior to placement of the HMA, between HMA layers, and to vertical surfaces of curbs, gutters, construction joints per Section 39-1.09C. Tack Coat shall be slow setting asphalt emulsion SS1h per Section 94, "Asphaltic Emulsion," of the Standard Specifications.

PART 3 - EXECUTION

3.01 PLACEMENT

A. HMA

1. Placement of HMA shall be in accordance with Section 39 of the Standard Specifications.
2. A tack coat treatment shall be applied to finished surfaces of aggregate and concrete surfaces where HMA will meet and shall be applied per Section 39-1.09 of the Standard Specifications.
3. Total HMA thickness shall be as specified on the plans.
4. All HMA including pathways to be compacted to 92%-97% relative compaction.

MEASUREMENT AND PAYMENT

The contract unit price paid per ton of Hot Mix Asphalt shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in mobilization as specified herein and conforming to the provisions of this section and no additional compensation will be allowed therefore.

Tack Coat will be included in the cost of HMA and no additional compensation will be allowed.

END OF SECTION 32 30 00

SECTION 32 40 00
CURB, GUTTER, AND SIDEWALKS

PART 1 -- GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Specified Products.
- C. Execution.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 31-2000, Earthwork General Provisions.
- B. Section 31-3000, Site Preparation.
- C. Section 32-1000, Concrete.

1.03 REFERENCES

- A. CSS - CALTRANS STANDARD SPECIFICATIONS
 - 1. Section 10 & 18, Dust Control.
 - 2. Section 19, Earthwork.
 - 3. Section 24-29, Subbases and Bases.
 - 4. Section 52, Reinforcement.
 - 5. Section 73, Concrete Curb and Gutters.
- B. UCS - Marin County Uniform Construction Standards.

1.04 DESCRIPTION

- A. This section covers the work necessary to construct the monolithic sidewalk, complete, as shown on the Drawings and specified herein.

1.05 CONTRACTOR SUBMITTALS

- A. Submit complete information regarding mix to the ENGINEER.
- B. If a curb and gutter machine is to be used to do the Work, submit information for approval by the ENGINEER.
- C. If metal forms are to be used to do the Work, submit information for approval by the ENGINEER.

1.06 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- ASTM C309 Compounds for Curing Concrete
- ASTM C94 Specification for Ready Mixed Concrete
- ASTM D994 Specification for Preformed Expansion Joint Filler for Concrete (Bituminous)
- CBC 2022 California Building Code 2022

PART 2 -- PRODUCTS**2.01 CONCRETE**

- A. Concrete shall be as specified in plans and CSS.

2.02 REINFORCING STEEL

- A. Reinforcing steel shall be as specified in plans and CSS.

2.03 CURING COMPOUND

- A. Liquid membrane-forming curing compound shall be clear or translucent, suitable for spray application and shall conform to ASTM C309, Type 1.

2.04 FORMS

- A. Materials for the monolithic sidewalk forms shall be 2-inches dressed dimension lumber or metal of equal strength, free from defects which would impair the appearance or structural quality of the completed structure. Where short radius forms are required, 1-inch dressed lumber or plywood may be used. Provide stakes and bracing materials as required to hold forms securely in place.
- B. Forms shall not vary from vertical grade by more than 0.02 feet and from horizontal alignment by more than 0.05 feet within the distance not to exceed 25 feet at each occurrence. Unnecessary meandering of the alignment line shall be sufficient cause for rejection and removal. All forms shall have smooth even lines in both the horizontal and vertical plane.

2.05 BASE

- A. Material shall conform to Class 2 Aggregate Base as specified in CSS.

2.06 EXPANSION JOINT FILLER

- A. Expansion joint filler shall be preformed asphalt-impregnated, expansion joint material, confirming to ASTM D994.

PART 3 -- EXECUTION**3.01 PREPARATION OF SUBGRADE**

- A. Bring the areas on which monolithic sidewalk, curb and gutters are to be constructed to required grade. The top of subgrade soils shall be compacted as specified in Section 31-6000, Trenching, Backfill, and Compaction, for soils beneath pavement areas.

3.02 PLACING AGGREGATE BASE

- A. Place aggregate base to depth shown on the Drawings. Sprinkle with water and compact by rolling or other method. The top of the compacted gravel shall be at the proper level to receive the concrete.

3.03 SETTING THE FORMS

- A. Construct forms to the shape, lines, grades, and dimensions called for on the Drawings. Stake wood or

CURB, GUTTER, AND SIDEWALKS

- A. Construct forms to the shape, lines, grades, and dimensions called for on the Drawings. Stake wood or steel forms securely in place, true to line and grade.
- B. Forms on the face of the monolithic sidewalk shall not have any horizontal joints within 7-inches of the top of the curb. Brace forms to prevent change of shape of movement in any direction resulting from the weight of the concrete during placement. Construct short radius curved forms to exact radius. Tops of forms shall not depart from grade lines more than 1/8-inch in 10 feet.

3.04 SIDEWALK CONSTRUCTION

- A. Construct the monolithic sidewalk to the line and grade shown or established by the ENGINEER and CBC.
- B. The subgrade and forms shall be wet immediately in advance of placing concrete.
- C. Place expansion joints at intervals not to exceed 60 feet and at the beginning and end of curb returns.
- D. Place weakened plane joints in the monolithic sidewalk at intervals not exceeding 10 feet. Weakened plane joints shall be ¼ inch wide by 1 inch deep in curbs and in sidewalks. Place score marks ¼ inch wide by ¼ inch deep on sidewalks between weakened plane joints or as shown on the architectural plans.
- E. As soon as the concrete has set sufficiently to support its own weight, remove the front form and finish all exposed surfaces. Concrete paving and exposed slabs along the accessible route shall be slip-resistant, per CBC 11B-302.1. Finish shall have a uniformly textured surface, free of marks, honeycomb, and other defects. All defective concrete shall be removed and replaced at the CONTRACTOR'S sole expense. Upon completion of the finishing, apply an approved curing compound to exposed surfaces. Curing shall continue for a minimum of 5 days.
- F. Finished monolithic sidewalk shall present a uniform appearance for both grade and alignment. Remove any section of monolithic sidewalk showing abrupt changes in alignment or grade, or which is more than ¼ inch away from its location as staked, and reconstruct at the CONTRACTOR's sole expense.

END OF SECTION 32 40 00

**SECTION 32 84 00
PLANTING IRRIGATION**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Provide complete, automatically controlled, spray sprinkler, turf rotor, bubbler and/or drip underground irrigation system as shown on Drawings.
- B. This Section includes but is not limited to: excavating, backfilling, finish grading, piping, valves, sprinklers, specialties, controls, and wiring for automatic control irrigation system.
- C. Related Sections include the following:

- 1. Specification Section 32 92 00 Turf Planting

1.3 DEFINITIONS

- A. Certified Landscape Irrigation Auditor (CLIA): a person certified to perform landscape irrigation audits by the Irrigation Association Certification Board.
- B. Lateral (Circuit) Piping: Downstream from control valves to sprinklers, rotors, emitters and specialties. Piping is under pressure during flow.
- C. Mainline Piping: Downstream from point of connection to water distribution piping to, and including, control valves. Piping is under water-distribution-system pressure.

D. The following are industry abbreviations for plastic materials:

1. ASME: American Society of Mechanical Engineers.
2. ASTM: American Society for Testing and Materials.
3. AWG-UF: American Wire Gauge - Underground Feeder
4. NFPA: National Fire Protection Association.
5. PSIG: Pounds per Square Inch Gauge.
6. PVC: Polyvinyl Chloride Plastic.
7. SDR: Standard Direct Ratio.
8. V: Volt

1.4 PERFORMANCE REQUIREMENTS

- A. Location of Sprinklers, Rotors, Emitters and Specialties: Design location is approximate. Make minor adjustments necessary to avoid plantings and obstructions such as signs and light standards. Maintain 100 percent, head to head, water coverage of turf and planting areas indicated with uniform coverage and minimum over-spray onto paving and no spray onto buildings and structures.
- B. Minimum Working Pressures: The following are minimum rated pressure requirements for piping, valves, and specialties, unless otherwise indicated:
1. Irrigation Main Piping: 200 psig.
 2. Lateral (Circuit) Piping: 150 psig.

- C. Irrigation Schedule: In accordance with DSA Title 24, Part 11 – Outdoor Water Use Requirements, Contractor shall prepare two (2) – three (3) irrigation schedules, one for plant establishment, one for the established landscape and one for temporarily irrigated areas if applicable. Each schedule shall indicate the number of gallons used and shall target the Estimated Total Water Use (ETWU) and not exceed the Maximum Applied Water Allowance (MAWA) calculated on the Irrigation Plan “California Water Efficient Landscape Worksheet.” Irrigation Schedule shall be submitted at substantial completion. After acceptance of substantial completion, Contractor shall laminate schedule in plastic and place in controller enclosure prior to final completion and end of maintenance. In preparing the Irrigation Schedule, the Contractor shall consider the following:

1. Irrigation interval (days between irrigation).
2. Irrigation run times.
3. Number of cycle starts to avoid runoff.
4. Amount of applied water scheduled to be applied on a monthly basis.
5. Application rate setting.
6. Root depth setting.
7. Plant type setting.
8. Soil type.
9. Slope factor setting.
10. Shade factor setting.
11. Irrigation uniformity or efficiency setting.

1.5 SUBMITTALS

- A. Product and Project Data: With-in 14 days after award of the contract, furnish the Owner’s Representative with submittal data on all items intended for installation. Substitute equipment or material installed without the approval of the Owner’s Representative will be removed and replaced with specified items at this Contractor’s expense. Submit manufacturer’s technical data and installation instructions for irrigation components. Include pressure ratings, rated capacities, and settings of irrigation components. Submittal shall include the following:

1. Backflow device including cage and/or blanket.
2. Master control valve
3. Flow Sensor(s)
4. Hydrometer
5. Main, lateral (circuit) and sleeving pipe.
6. Pipe fittings, primer and cement.
7. Tracer wire and/or warning tape.

8. Isolation valves.
 9. Remote control valves.
 10. Valve boxes.
 11. Sprinklers, rotors, bubblers, drip emitters.
 12. Swing joints.
 13. Tree bubbler drain tubes.
 14. Controllers. Include wiring diagrams, enclosures and mounting methods.
 15. Control wires. Include splice kits and conduit.
 16. Valve identification tags.
 17. Irrigation Wiring Diagram: Contractor shall prepare and submit an irrigation wire diagram showing location of control wire, common wire, spare control wire and spare common wire with quantities noted at each run shown on copy of irrigation plan in a legible size and format.
 18. Irrigation installation firm qualifications in accordance with "quality assurance".
 19. Name and contact information of certified irrigation auditor performing the irrigation audit for this project.
- B. Coordination Drawings: During the course of construction, maintain orderly set of irrigation drawings and details on project site during installation of irrigation system. Record daily changes showing piping and major system components. Measure and neatly record dimensions for all mainlines, control wire runs, and all other pertinent information facilitating maintenance and extension of the irrigation system to within one (1) foot horizontally and six (6) inches vertically. Indicate interface and spatial relationship between piping, system components, adjacent utilities, and proximate structures. Up to date coordination drawings shall be available for review prior to meetings with the Owner's Representative.
- C. Submittals at Substantial Completion:
1. Irrigation Record Drawings. Contractor shall record information gathered on "Coordination Drawings" onto a clean set of Irrigation Plans for documentation of as-built conditions.

2. Controller Legend: Upon approval of record drawing submittal, prepare two (2) legible, reduced to 11" by 17" in size, non-fading, waterproof copies of the Record Irrigation Drawings, laminated between two (2) .020 mm (minimum) plastic sheets, printed on front side only. Attach one (1) copy to door of controller or enclosure and deliver one (1) copy to Owner. Plan sheet shall include the following information:
 - a. Installing Contractor's company name, phone number and address.
 - b. Color coded zone identification by valve.
 - c. Zone start time.
 - d. Zone water duration.
 - e. Type of planting irrigated.
 - f. Valve size, station numbers and controller designations.
3. Contractor shall retain the services of a third party Certified Landscape Irrigation Auditor to perform a landscape irrigation water audit and prepare an irrigation audit report compliant with MWELO 492.12 including, but not limited to inspection, system tune-up, system test with distribution uniformity, correcting over-spray or run-off and configuring controllers with application rate, soil type, plant factors, slope, sun exposure and other factors necessary for accurate programming. Submit preliminary report at substantial completion, allow for adjustments during maintenance and submit report confirming irrigation installation is compliant with DSA MWELO at final completion.
4. Submit Irrigation Schedule for review and approval in accordance with DSA Title 24, Part 1 at substantial completion. Once approved, laminate in plastic and place inside controller enclosure for final completion at end of maintenance period.
5. Contractor shall provide the owner with one (1) quick coupler key with hose swivel per each five (5) quick couplers.
6. Irrigation System Leak Test Results.
7. Irrigation backflow preventer certification.
8. Central control installation certification.
9. Operation and Maintenance Data: For irrigation systems, to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 1 Section "Closeout Procedures," include data for the following:
 - a. Automatic-control valves.
 - b. Sprinklers, rotors and/or emitters.
 - c. Controllers.

1.6 QUALITY ASSURANCE

A. Governing Agency Requirements:

1. For projects subject to review and approval by local governing agencies, Contractor shall comply with the State of California Model Water Efficient Landscape Ordinance at a minimum and shall conform to local codes and/or ordinances, whichever may be more stringent.
2. For projects under review of DSA, Contractor shall comply with the State of California Model Water Efficient Landscape Ordinance requirements at a minimum.

B. Installer Qualifications:

1. Experience: The irrigation installation firm shall have contracted for and successfully completed construction of a minimum of five (5) California public school district construction projects, approved by the Division of the State Architect (DSA), within the past five (5) years of similar size, complexity, budget and scope.
2. Licensure: The irrigation installation firm shall hold a current, active C27 "Landscaping Contractor" license classification by the California State License Board that has been consistently active for at least five (5) years and that has not been suspended or revoked.
3. Supervision: The irrigation installation firm shall have a qualified and experienced irrigation technician on site during irrigation installation.
4. Drip Irrigation: The irrigation installation firm shall have contracted for and successfully complete construction of a minimum of five (5) drip irrigation installations within the past five (5) years of similar size and complexity.

C. Manufacturer Qualifications: Provide underground irrigation system as a complete unit. Each type component produced by a single acceptable manufacturer, including heads, valves, controls and accessories.

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

E. Pipe crossings beneath fire Lanes: Comply with NFPA 24-10, Depth of Cover at Fire Access Lanes.

F. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination"

- G. All work and materials shall be in strict accordance with the latest rules and regulations of the State Fire Marshall, Safety Orders of the Division of Industrial Safety, National Electrical Code, California Administrative Code, part 4, Title 24, "Basic Mechanical Regulations" and other applicable state or local laws or ordinances. Nothing in these drawings or specifications is to be construed as permitting work which does not conform to the codes or regulations.
- H. Contractor shall provide all licenses, fees and other charges required for completion of the work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver piping with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe-end damage and to prevent entrance of dirt, debris, and moisture.
- B. Store plastic piping protected from direct sunlight. Support to prevent sagging and bending.

1.8 PROJECT CONDITIONS

- A. Interruption of Existing Water Service: Do not interrupt water service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary water service according to requirements indicated:
 - 1. Notify Owner's Representative no fewer than two days in advance of proposed interruption of water service.
 - 2. Do not proceed with interruption of water service without Owner's Representative's written permission.
- B. Interruption of Existing Irrigation Service: Do not interrupt existing to remain irrigation service. Prior to demolition work and prior to beginning irrigation work, review project site and meet with Owner Representative to review locations and connections of existing to remain irrigation system. Coordinate with General Contractor to ensure existing irrigation remains in place and operable through the duration of construction. In the event existing irrigation is shut off or damaged during construction, contractor shall provide temporary connections or modifications to continue water service to existing to remain planting material or turf to maintain in a healthy growing condition throughout construction. In the event water service is not available, contractor shall apply water through manual delivery means as necessary. Obtain approval from Owner's Representation two days in advance of any planned disruptions in water service.

1.9 COORDINATION

- A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 3.

1.10 MAINTENANCE

- A. Irrigation maintenance shall coincide with planting maintenance

In the event planting is not part of this work, maintenance shall begin at written approval from Owner's Representative of substantial completion, run ninety (90) calendar days and until receipt of Owner's Representative's written acceptance of completion of punch list items.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Use new materials of brands shown on Drawings, specified herein or approved equal.
- B. Use existing materials if shown on Drawings.
- C. Substitution of sprinklers, rotors, drip, valves and controllers will not be allowed due to variation in flows, precipitation rates, friction losses, and sizing and maintaining consistency with client equipment standards.

2.2 PIPES, TUBES, AND FITTINGS

- A. Above Grade Irrigation Mainline Piping: Steel Pipe: ASTM A 53/A 53M, Schedule 40, Type S or E, Grade A or B, galvanized with threaded ends.
1. Steel Pipe Nipples: ASTM A 733, made of ASTM A 53/A 53M or ASTM A 106, Schedule 40, galvanized, seamless steel pipe with threaded ends.
 2. Malleable-Iron Unions: ASME B16.39, Class 150, hexagonal-stock body with ball-and-socket, metal-to-metal, bronze seating surface, and female threaded ends.
 3. Gray-Iron Threaded Fittings: ASME B16.4, Class 125, galvanized, standard pattern.
 4. Cast-Iron Flanges: ASME B16.1, Class 125.
 5. Cast-Iron Flanged Fittings: ASME B16.1, Class 125, galvanized.
- B. Mainline Piping: (unless specified otherwise on Drawings):
1. Class 200 (C900), gasketed, purple reclaimed water PVC pipe, ASTM D-2241, NSF approved (size 6" and larger).
 2. Class 315 purple reclaimed water PVC pipe, ASTM D-2239, NSF approved (size 2-1/2" to 4").
 3. Schedule 40 purple reclaimed water PVC pipe, ASTM D-1785, NSF approved (size 2" and smaller).
 4. Fittings to be schedule 80 PVC.

C. Lateral Line Piping (unless specified otherwise on Drawings):

1. Schedule 40 purple reclaimed water PVC pipe, ASTM D 2466, NSF approved.
2. Fittings to be schedule 40 PVC.

D. Sleeves (unless specified otherwise on Drawings):

1. For irrigation piping, use schedule 40 purple PVC pipe, NSF approved, size and quantity as required for irrigation piping unless otherwise specified on drawings..
2. For irrigation wiring, use schedule 40 PVC pipe, UL listed, NEMA TC-6, ANSI/UL651, ASTM F512, for outdoor, direct bury applications, PVC, size and quantity as required, unless otherwise specified on Drawings.
3. Fittings to be schedule 40 PVC.

2.3 Valves:

A. BACKFLOW PREVENTION DEVICE:

1. As indicated on the Drawings.

B. BOOSTER PUMP:

1. As indicated on the drawings.

C. ISOLATION VALVES:

1. As indicated on the drawings.

D. QUICK-COUPLING VALVES:

1. As indicated on the drawings.

E. REMOTE CONTROL VALVES:

1. As indicated on the drawings.

F. VALVE BOXES:

1. In paved areas, use Christy or Carson concrete utility box, size as required.
2. In planting areas, use Carson plastic underground enclosure with locking lid, bolt and washer, size as required, color to be green for potable water and purple for non-potable water systems.
3. Valve boxes to be rectangular for remote control valves and ball or gate valves and round for quick coupling valves.
4. Valve box lid shall be labeled "IRRIGATION".

G. PULL BOXES AND SPLICE BOXES:

1. In paved areas, use Christy concrete utility box, size as required.
2. In planting areas, use Carson plastic underground enclosure with locking lid, bolt and washer, size as required, color to be green for potable water and purple for non-potable water systems.
3. Valve boxes to be rectangular for remote control valves and ball or gate valves and round for quick coupling valves.
4. Box lid to be labeled "IRRIGATION".

H. WIRE MESH AT VALVE BOXES:

1. 1/2 inch by 1/2", 16 gauge, galvanized wire mesh hardware cloth.

I. VALVE IDENTIFICATION TAGS:

1. Shall be plastic yellow in color for potable water systems and purple in color for recycled water systems with 1 1/8" stamped black letters indicating controller/station number.

J. SAND BACKFILL:

1. Shall consist of natural sand, manufactured sand, existing of native material, or combinations thereof, and shall conform to ASTM C-40 Organic Impurities, ASTM D-2419 Sand Equivalent and a pH value between 4.5 and 9.

K. VALVE BOX ROCK:

1. Shall be 3/4" or smaller drain rock or pea gravel unless specified otherwise on Drawings.

L. VALVE BOX SUPPORT BRICK:

1. Shall be common red brick unless specified otherwise on Drawings.

2.4 AUTOMATIC-CONTROL SYSTEM:

A. CONTROLLER: As indicated on Drawings.

B. AUTOMATIC CONTROLLER GROUNDING:

1. Contractor shall install grounding recommended by manufacturer for installation method detailed on this product.

C. 24 VOLT WIRING:

1. All 24 V line to be #14-1 AWG-UF. Control wire insulation to be red in color and spare wire to be yellow in color. 24 V common wire to be #12-1 AWG-UF, insulation to be white in color and spare common insulation shall be black in color.

D. SPLICING MATERIALS:

1. Manufacturer's packaged kit consisting of insulating, spring-type connector or crimped joint and epoxy resin moisture seal; suitable for direct burial.

E. CONNECTORS:

1. Shall be Splice-Kote, Dura Seal heat shrink waterproof nylon wire connectors, or 3M "DBY" connectors.

2.5 TRACER WIRE/DETECTABLE WARNING TAPE:

A. Install tracer wire or detectable warning tape as indicated on Drawings.

B. Tracer Wire: #8 solid Bare Copper Wire.

C. Detectable Warning Tape: Electronically detectable plastic tape with metallic core, Terra Tape D, manufactured by Griffolyn Co., or equal, two (2) inches in width, continuously imprinted "caution buried water line".

2.6 CONCRETE THRUST BLOCKING:

- A. Shall be clean, Portland Cement Concrete, cast in place, five sacks of cement per cubic yard mixture with a 28-day compressive strength of 2,500 PSI.

2.7 SPRINKLERS AND/OR EMITTERS:

- A. As indicated on the drawings. Drip system fittings shall be of same manufacturer and/or as recommended by manufacturer.

2.8 SPRINKLER SPECIALTIES:

- A. As indicated on the drawings.

PART 3 - EXECUTION

3.1 EARTHWORK

- A. Refer to Division 31 "Earthwork" for excavating, trenching, and backfilling.
- B. Install piping and wiring in sleeves under sidewalks, roadways, and parking lots, and under or through footings and building walls.
 1. Install piping sleeves by boring or jacking under existing paving if possible.
 2. Install quantity and size of sleeves required for the project for irrigation piping, PVC for irrigation pipes and conduit for electrical wires.

3. Sleeves shall extend twelve (12) inches beyond edges of paving and walls with ends capped.
 - C. Provide minimum cover over top of underground piping according to the following:
 1. Irrigation Mainline Piping: Minimum depth of 24 inches below finished grade to top of pipe.
 2. Lateral Piping: Minimum depth of 18 inches below finished grade to top of pipe.
 3. Sleeves containing control wires, mainline and/or lateral piping beneath standard paving: Minimum depth of 24 inches from finish surface to top of sleeve.
 4. Sleeves containing control wires, mainline and/or lateral piping beneath vehicular paving including fire lanes/emergency vehicle access (EVA): Minimum depth of 36 inches from finish surface to top of sleeve.
 5. Drip Irrigation: Install drip and/or emitter lines and tubing as detailed on Drawings.
 - D. 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. Minimum 3" clearance between pipes. Twelve (12") inch minimum width for mainlines and six (6") inch minimum width for lateral lines.
 - E. Trenches with pressure pipe and control wiring to be backfilled with sand to 6 inches minimum above top of pipe. Continue backfilling in 6 inch layers with soil free of rocks or waste materials. Compact soil to a density equal to the surrounding undisturbed soil, but not less than 90%. Any subsequent depressions filled at the Contractor's expense. Particular attention is directed to firmly tamp and moistening around sprinkler heads and quick-couplers.
 1. For Irrigation pipe three (3) inches and larger in size, install additional six (6) inch depth sand beneath piping.
 - F. Trenches and backfill installed under paving, asphalt concrete or concrete shall be backfilled with sand and compacted in layers equal in density to the adjacent undisturbed soil or to 90% compaction, using manual or mechanical tamping devices. All trenches shall be left flush with the adjoining grade.
 1. The Contractor shall set in place, cap and pressure test pressurized mainline under paving prior to the paving installation.
 2. For irrigation pipes three (3) inches and larger in size, install additional six (6) inch depth sand beneath piping.
- 3.2 PREPARATION
- A. Set stakes to identify locations of proposed irrigation system. Obtain Owner's Representative's approval before excavation.

3.3 PIPING APPLICATIONS

- A. Install components having pressure rating equal to or greater than system operating pressure.
- B. Piping in control valve boxes and above ground may be joined with flanges instead of joints indicated.
- C. Above Ground Irrigation Mainline Piping: Use any of the following piping materials for each size range:
 - 1. NPS 4 and Smaller: Steel pipe; malleable-, gray-, or cast-iron fittings; and threaded joints.
 - 2. NPS 5 and Larger: Steel pipe; malleable-, gray-, or cast-iron fittings; and threaded joints.
- D. Underground irrigation main piping shall be purple recycled water pipe, polyvinyl chloride (Type I) plastic pipe PVC 1120 and NSF approved, Schedule 40 PVC solvent-weld.
- E. Underground Irrigation Lateral (Circuit) piping shall be purple recycled water pipe, polyvinyl chloride (Type I) plastic pipe PVC 1120 and NSF approved, schedule 40 PVC solvent-weld.
- F. Mainline pipe sizes 6" and larger shall use gasketed pipe with bell fittings. Where solvent weld joints are required, contractor shall additionally install concrete thrust blocking.
- G. Underground Branches and Offsets at Sprinklers and Devices: Schedule 80, PVC pipe; threaded PVC fittings; and threaded joints.
- H. Mainline Fittings and Couplings: Schedule 80, PVC pipe, solvent weld up to 4" and gasketed with bell fittings 6" and larger pipe.
- I. Risers to Aboveground Sprinklers and Specialties: ASTM A-120 Schedule 40 galvanized steel pipe with 150 lb. banded galvanized malleable iron fittings.
- J. Double Swing Joint Assembly:
 - 1. Install double swing joint at all sprinkler heads and quick couplers.
 - 2. Elbows shall be PVC Class 1220, Schedule 40.
 - 3. Install as follows:
 - a. Screw 2 inch long nipple horizontally into plastic tee or ell at lateral line.
 - b. Screw on elbow and a 6 inch long nipple.
 - c. Screw on another elbow and a 2 inch long nipple and install riser vertically to head, or quick coupler valve.
 - d. Swing joint must offset to the right.

- K. Sleeves: Schedule 40 PVC pipe and socket fittings; and solvent-cemented joints.
- L. Transition Fittings: Use transition fittings for plastic-to-metal pipe connections according to the following:
 - 1. Couplings:
 - a. Underground Piping NPS 1-1/2 and Smaller: Manufactured fitting or coupling.
 - b. Underground Piping NPS 2 and Larger: AWWA transition coupling.
 - 2. Fittings:
 - a. Aboveground Piping: Plastic-to-metal transition fittings.
 - b. Underground Piping: Union with plastic end of same material as plastic piping.
- M. Dielectric Fittings: Use dielectric fittings for dissimilar-metal pipe connections according to the following.
 - 1. Underground Piping:
 - a. NPS 2 and Smaller: Dielectric couplings or dielectric nipples.
 - b. NPS 2-1/2 and Larger: Prohibited except in valve box.
 - 2. Above ground Piping:
 - a. NPS 2 and Smaller: Dielectric unions.
 - b. NPS 2-1/2 to NPS 4: Dielectric flanges.
 - 3. Piping in Valve Boxes or Vaults:
 - a. NPS 2 and Smaller: Dielectric unions.
 - b. NPS 2-1/2 to NPS 4: Dielectric flanges.
 - 4. Dielectric fittings are specified in Division 22 Plumbing.

3.4 VALVE APPLICATIONS

- A. Backflow Prevention Devices:
 - 1. New and relocated backflow devices must be tested at time of installation. Contractor shall have test performed by a Certified Backflow Tester who has a current State of California Contractor's license C-36 or General Contracting License.
 - 2. For new backflow preventer installation, a Certified Tester shall test and provide results and certification to the Owner's Representative within five (5) days of the date of testing and to provide any testing data or certification required by the local water provider. A Department of Public Health sticker shall be placed on backflow device before the system is accepted by the Owner's Representative.
 - 3. Install per local codes and water purveyor requirements.
 - 4. A Department of Public Health sticker shall be placed on backflow device before the system is accepted by the Owner's Representative.
- B. Underground Gate/Ball Valves: Install in control-valve box as detailed on drawings.

- C. Underground, Manual Control Valves: Install in manual control-valve box as detailed on drawings.
- D. Remote Control Valves: Install in control-valve box as detailed on drawings.
- E. Drain Valves: Install in control-valve box as detailed on drawings.
- F. Install each valve in a separate valve box (unless noted otherwise in Drawings and details) and in appropriate locations as shown on Drawings. Allow 12 inches between valve boxes and between valve boxes and walls or walks or landscape edges. Boxes shall be arranged perpendicular and parallel to each other and aligned in a row.

3.5 PIPING INSTALLATION

- A. Location and Arrangement: Drawings indicate location and arrangement of piping systems. Install piping as indicated unless deviations are approved on Coordination Drawings. Piping shown on drawings is diagrammatic. General arrangement of piping shall be followed as near as practical. Where piping is shown running continuously in paving and adjacent to planting area, intent is to install piping within planting areas where practical.
- B. Install pipe sleeves at all points where pipes pass through concrete, asphalt or masonry. In footings, allow 1 inch clearance around pipe, and in other locations allow ½ inch. Each end of sleeve shall extend 6 inches beyond edge of paving or structure above. Provide removable non-decaying plug at each end of sleeve to prevent intrusion of earth and debris.
- C. If drain valves are used, install piping at minimum uniform slope of 0.5 percent down toward drain valves.
- D. Install piping free of sags and vertical bends.
- E. Install groups of pipes parallel to each other, spaced to permit valve servicing.
- F. Install fittings for changes in direction and branch connections. Pipe bending shall not exceed manufacturer recommended radii.
- G. Install flanges adjacent to valves and to final connections to other components with NPS 2-1/2 or larger pipe connection.
- H. Install dielectric fittings to connect piping of dissimilar metals.
- I. Install underground thermoplastic piping according to ASTM D 2774 and ASTM F 690.

- J. Lay piping on solid sub-base, fully and evenly supported by bedding, uniformly sloped without humps or depressions.
- K. Install PVC piping in dry weather when temperature is above 40 degrees F (5 degrees C). Allow joints to cure at least 24 hours at temperatures above 40 degrees F (5 degrees C) before testing unless otherwise recommended by manufacturer.
- L. Snake pipe a minimum of one (1) additional foot per one hundred (100) feet of pipe to allow for expansion and contraction.
- M. Cap or plug openings as soon as lines have been installed to prevent intrusion of debris.
- N. Install concrete thrust blocking, at a minimum, on pressurized mainline three (3) inches and larger in size at changes in direction, connections or branches from mainline and dead ends and as necessary to prevent pipe movement thrusts created by internal water pressure. Concrete shall be placed directly on the fitting perpendicular to the line of thrust and also against the undisturbed earth. The amount of concrete shall be in accordance to the pressure, angle and soil type. Refer to pipe manufacturer for calculating exact size of thrust blocking material, 2019 CPC and IAPMO installation standards.
- O. After installation of pipe lines and sprinkler risers, and prior to installation of sprinkler heads, automatic valves and quick couplers, thoroughly flush all lines with a full head of water to remove any foreign material, scale, sediment, etc.

3.6 TRACER WIRE

- A. Install as detailed along all new irrigation mainline piping on bottom of trench, carefully run to avoid stress from backfilling and shall be continuous throughout the mainline pipe runs. Fasten tracer wire to mainline at eight (8) foot intervals with tape. Take precautions to ensure tape is not damaged or misplaced during backfill operations.
- B. Tracer wire shall follow mainline pipe and branch lines, originating in irrigation valve box at gate, ball or remote control valve located closest to irrigation point of connection and run to ball, gate and/or remote control valves at the end of mainline runs or shall loop entire system where mainlines are looped.
- C. Record locations of tracer wire origin and terminations on project record drawings.

3.7 DETECTABLE WARNING TAPE

- A. Install tape with printed side up, directly over mainline pipe and on top of sand backfill, 18 inches below grade. Take precautions to ensure tape is not damaged or misplaced during backfill operations.

3.8 JOINT CONSTRUCTION

- A. Refer to Division 22 Section "Piped Utilities -- Basic Materials and Methods" for basic pipe joint construction.
- B. Install threaded pipe joints as follows:
 - 1. Use pipe joint sealant for all plastic to plastic and plastic to steel joints, do not apply to sprinkler inlet ports.
 - 2. For PVC, hand tighten only. Do not over tighten threaded joints. Thread until fitting stops, then add a half turn.
 - 3. Use pipe joint compound and/or Teflon tape for all steel to steel joints.
- C. Install gasketed joint per manufacturer recommendations (printed on pipe material) and using the lubricant supplied with the pipe.

3.9 VALVE INSTALLATION

- A. Underground Gate/Ball Valves: Install in valve box as detailed on drawings.
- B. Underground, Manual Control Valves: Install in manual control valve box as detailed on drawings.
- C. Remote Control Valves: Install in control valve box as detailed on drawings.
- D. Drain Valves: Install in control valve box as detailed on drawings.
- E. Install each valve in a separate valve box (unless noted otherwise in Drawings and details) and in appropriate locations as shown on Drawings. Allow 12 inches between valve boxes and between valve boxes and walls or walks or landscape edges. Boxes shall be arranged perpendicular and parallel to each other and aligned in a row.

3.10 SPRINKLER INSTALLATION

- A. Locate part-circle sprinklers to maintain a minimum distance of six (6) inches from adjacent paving and edges and twelve (12) inches clearance from walls, fences and other structures, unless otherwise indicated on Drawings.

- B. Spray sprinklers shall not be installed less than 24" from non-permeable surfaces unless the adjacent non-permeable surface is constructed to drain entirely to the landscape area.
- C. Swing Joint Assembly:
 - 1. Install triple swing joint at all sprinkler heads and quick couplers.
 - 2. Elbows shall be PVC Class 1220, Schedule 40.
 - 3. Install as follows:
 - a. Screw 2 inch long nipple horizontally into plastic tee or ell at lateral line.
 - b. Screw on elbow and a 6 inch long nipple.
 - c. Screw on another elbow and a 2 inch long nipple.
 - d. Screw on another elbow and install riser vertically to head, or quick coupler valve.
 - e. Swing joint must offset to the right.
- D. Sprinkler Installation:
 - 1. Install sprinklers heads as shown on drawings and details.
 - 2. Install plumb to finish grade.
 - 3. Tool tighten all sprinkler body covers and nozzles.

3.11 DRIP/EMITTER INSTALLATION

- A. Minimum cover sub-surface drip tubing: drip and/or emitter lines shall be installed as detailed with drip tubing installed four (4) inches grade and below the mulch top dressing layer.
- B. Minimum cover of tubing to individual shrubs: shrub bubbler tubing shall be installed to a depth of (4) inches and rising to the surface at target shrub rootball. No more than one (1) inch of tubing shall be exposed at shrub rootball.
- C. Backfill after lines have been reviewed, tested for leaks and approved by Owner's Representative.
- D. Assembling drip system shall keep pipe and tubing free from dirt and debris, pipe ends shall be cut square, deburred and cleaned.
- E. Flush piping prior to installing remote control valve assembly (control zone kit assembly).
- F. Follow manufacturer recommendations.

3.12 AUTOMATIC-CONTROL SYSTEM INSTALLATION:

- A. Exact location of controllers shall be reviewed and approved by Owner's Representative.
- B. Provide connection to nearest available 110 volt electrical service.

- C. Contractor shall install grounding system per manufacturer recommendations.
- D. Prior to installation of hardscape, coordinate and install electrical supply and control wire conduit, size and quantity as required for each controller and spare wiring. Install pull boxes and conduit from clock location.
- E. Control wiring shall be neatly coiled beneath controller terminal strip and labeled with corresponding station number. Controller terminal strip cover plate shall fasten securely in place.
- F. Contractor is responsible to provide fully automatic system operated by specified controller(s). Contractor shall install quantity of red wiring equal to the number of stations on the specified irrigation controller(s), plus five (5) yellow spare control wires for each controller, a common white wire and a spare common black wire. Example, 24 station clock shall have 24 control wires, 5 spare control wires and 2 common wires installed with mainline and running through all associated valve boxes. Wires shall be installed per plans and details from remote control valve(s) to controller(s).
- G. Example of mainline that is not looped and terminates in 3 locations with a 24 station clock and 18 stations used:
 - 1. Wire quantities shall be:
 - a. 18 red control wires for stations 1-18
 - b. 6 red control wires for un-used stations 19-24
 - c. 1 white common wire
 - d. 1 black spare common wire
 - e. 5 yellow spare wires
 - 2. Wire runs:
 - a. 18 red control wires (stations 1-18) shall run from controller to corresponding valve.
 - b. 6 red control wires (un-used stations 19-24) shall run from controller with 2 running down each of the 3 mainline terminations and looping through each valve box.
 - c. 1 white common wire shall run from controller and connect to each valve associated with that controller.
 - d. 1 black spare common wire shall run from controller and connect to each valve associated with that controller.
 - e. 5 yellow spare control wires shall run from controller and loop through each valve box associated with that controller.

- 3. Contractor shall label all wires with water-proof marking with corresponding station number or as spare control wire, spare common wire or spare stations 19-24.
- H. Wiring path is not shown on drawings and shall run from specified controller(s) to irrigation pull box if shown, then to the nearest irrigation mainline location, follow mainline (existing and/or new) to each remote control valve. Indicate wire location on record drawings where it does not follow mainline. Common and spare wires shall loop through entire system. Wiring may be shown on drawings only where required for future irrigation extensions.
- I. Wiring may be shown on drawings only where required for future irrigation extensions.
- J. Irrigation Central Control system is standard for this project.
- K. Irrigation Central Control System must be compatible with owners central control software and hardware. Contractor shall ensure controller communicates properly with project central computer and receives daily downloads for weather updates.

3.13 CONNECTIONS/ELECTRICAL WIRING

- A. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Ground equipment according to Division 16 Section.
- C. Connect wiring according to Division 16 Section.
- D. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
- E. 24 volt splices to be made with 3M Co. #3577 splice kit, as to manufacturer's instructions. Splices to be made only at valve box or pull box.

3.14 REMOTE CONTROL VALVE WIRING

- A. Wires shall be installed in electrical conduit between controller and pull box. Pull box to be located in ground nearest controller. Top of box to be flush with finish grade.
- B. Provide separate irrigation wire sleeves under concrete or asphalt for irrigation wires, size and quantity as required, 24" minimum cover in planting areas and 36 "minimum cover under fire lanes and pavements. All wires from the pull box shall be direct burial. The wiring shall be bundled and secured to the lower side of the irrigation pipe at 10 foot intervals with plastic electrical tape.

- C. Wires from the pull box shall be direct burial. The wiring shall be bundled and secured to the lower side of the irrigation pipe at ten (10) foot intervals with plastic electrical tape. Provide a minimum of 24 inches excess of coil of control wires in each 100 feet of run to controller. Sufficient slack shall be left in the wire to provide for expansion and contraction.
- D. Provide 24 inches excess of coil of control wires in each 100 feet of run to controller.
- E. Provide 24 inches excess of coil of control wires in each valve box and pull box.
- F. Control wires to be buried a minimum of 24 inches below finish grade.
- G. Wiring shall be tested for continuity, open circuits and unintentional grounds prior to connecting to equipment.
- H. Install irrigation wire splice boxes where wire splices are necessary.

3.15 LABELING AND IDENTIFYING

- A. Valve Identification Tags: Install valve identification tag on each remote control valve with corresponding controller station number.

3.16 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including connections. Report results in writing.
- B. For landscape projects 2,500 square feet and larger, after substantial completion, Contractor shall schedule an Irrigation Audit to be performed by a third-party certified landscape irrigation auditor. Contractor shall make necessary adjustments, if any, during maintenance period and provide written certification of installation from certified landscape irrigation auditor as part of final completion and end of maintenance.

- C. Perform the following field tests and inspections in the presence of the Inspector and/or Owner's Representative with 72 hours advance notice. Contractor shall record date, time, names of those present and results and submit to Owner's Representative prior to requesting substantial completion review:
1. Leak test of pressurized mainline: After installation of mainline and prior to installing remote control valves, quick coupling valves or other valve assemblies and prior to backfilling trenches, test the mainline for leaks as follows:
 - a. Testing shall occur with trenches open. Center load piping with small amounts of backfill between fittings to prevent pipe displacement, arching or slipping. Fittings to be visible for testing.
 - b. Exercise care in filling the system with water to prevent excessive surge pressure and water hammer
 - c. Test pressurized mainline piping under hydrostatic pressure of 125 psi for six (6) continuous hours, minimum, with no more than five (5) psi drop in pressure. Coordinate with Owner's Representative for initial observation of beginning test and observation after test.
 - d. Correct deficiencies revealed by test and repeat pressure test to the satisfaction of the Owner's Representative.
 2. Operational Test: After electrical circuitry has been energized, operate controllers and automatic control valves to confirm proper system operation.
 3. Coverage Test: When the irrigation system has been completed, the Contractor, in the presence of the Architect and Owner's Representative, shall perform a Coverage Test to determine if the coverage of water is complete and adequate, the sprinkler heads and/or emitters function according to manufacturers' data and according to the intent of the construction documents. Replace irrigation components not performing satisfactorily and/or respace sprinklers and/or nozzles and/or emitters as necessary to provide complete irrigation coverage of plant material.
 - a. For new turf areas, Contractor shall demonstrate irrigation coverage over amended planting area and prior to installation of sod and/or seeded turf.
 4. Substantial Completion Review: At substantial completion of this Section, work shall be reviewed for conformance with the Drawings and Contractor shall make recommended repairs and/or corrections in a timely manner and prior to final completion.
 - a. At substantial completion, Contractor shall submit documentation per 1.5 "Submittals at substantial completion" to Architect for review and acceptance.
 - b. At substantial completion, Contractor shall deliver spare parts to Owner's Representative per 1.5 "Submittals at substantial completion".

- c. At substantial completion, contractor shall submit Certified Landscape Irrigation Auditor preliminary report on irrigation system.
- 5. Final Completion Review: After substantial completion repairs and/or corrections have been completed and at the end of the maintenance period, work shall be reviewed for final completion and approved by Owner's Representative in writing.
 - a. At final completion, Contractor shall submit Certified Landscape Irrigation Auditor final report confirming irrigation installation is compliant with DSA MWELo requirements.
- 3.17 CLOSING IN UN-INSPECTED WORK
 - A. The Contractor will pay all costs necessitated by required opening, restoration and correction of all work closed in or concealed before inspection, testing as required, and approval by authorized inspections.
- 3.18 STARTUP SERVICE
 - A. Verify that controllers are installed and connected according to the Contract Documents.
 - B. Verify that electrical wiring installation complies with manufacturer's submittal and installation requirements in Division 16 Sections.
 - C. Complete startup checks according to manufacturer's written instructions.
- 3.19 MAINTENANCE SCHEDULE
 - A. Fine tune and adjust irrigation system weekly coinciding with the landscape and/or turf planting maintenance period.
 - B. Adjust settings of controllers within WELO water budget and with seasonal changes.
 - C. Adjust automatic control valves to provide flow rate of rated operating pressure required for each sprinkler circuit.
 - D. Adjust sprinklers so they will be flush with, or not more than 1/2 inch above, finish grade.
 - E. Fill irrigation trenches due to settling.
- 3.20 CLEANING
 - A. Completely flush dirt and debris from piping before installing sprinklers and other devices.
 - B. After completion, cleanup and remove all resultant debris from site.

3.21 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain controller and automatic control valves. Refer to Division 1 Section "Demonstration and Training."

3.22 GUARANTEE (Project Close-out Item)

- A. Furnish a written Guarantee to the Owner, dated from the date of Final Acceptance, against defective workmanship, materials or components and guaranteeing repair or replacement for a period of 1 year; further guarantee restoration of all damage caused by leaks in the Irrigation System for a like period.
- B. Guarantee that the entire installation was made in accordance with the drawings, specifications and manufacturer's recommendations, using designated materials and installation procedures.
- C. Submit duplicate copies of the Guarantee for approval by the Owner's Representative. Approval is mandatory before final payment and acceptance.
- D. The guarantee for the irrigation system shall be made in accordance with the form attached at the end of this Section. The guarantee form shall be retyped onto the Contractors letterhead and contain the information shown.

GUARANTEE FOR SPRINKLER IRRIGATION SYSTEM

We hereby guarantee that the sprinkler system we have furnished and installed is free from defects in materials and workmanship, and the work has been completed in accordance with the drawings and specifications, ordinary wear and tear and unusual abuse or neglect excepted.

We agree to repair or replace any defects in materials and workmanship which may develop during the period for one (1) year from the date of acceptance and also to repair or replace any damage resulting from the repairing or replacing of such defects at no additional cost to the Owner. We shall make such repairs or replacements within a reasonable time, as determined by the Owner, after receipt of written notice.

The Owner reserves the right to make temporary repairs as necessary to keep the irrigation system and equipment in operating conditions. This shall not relieve the Contractor of his responsibilities under this Guarantee.

In the event of failure to make such repairs or replacements within a reasonable time after receipt of written notice from the Owner, we authorize the Owner to proceed to have said repairs or replacements made at our expense and we will pay the costs and charges therefore upon demand.

Project:_____

Location:_____

Name of Contractor:_____

Signed: (Authorized Signature)_____

Print Name of Authorized Signature_____

Address:_____

Phone:_____ Date of Acceptance:_____

END OF SECTION 32 84 00

(Revised 1/30/2024)

**SECTION 32 92 00
TURF PLANTING**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Sodding.
- B. Related Sections include the following:
 - 1. Specification Section 31 10 00 "Site Clearing" for topsoil stripping and stockpiling.
 - 2. Specification Section "Subdrainage" for subsurface drainage.

1.3 DEFINITION:

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Import Topsoil: Shall be obtained from a local source and coming from a site with similar soil characteristics as the project site. Topsoil shall be fertile, friable, natural loam surface soil, reasonably free of subsoil, clay lumps, brush, weeds and other litter and free of roots, stumps, stones and rocks and other extraneous or toxic matter harmful to plant growth.
- C. Manufactured Topsoil: Soil produced off-site by homogeneously blending nutrients, minerals, soils or sand with stabilized organic soil amendments to produce surface planting soil capable of sustaining plant growth.
- D. Planting Soil: On-site topsoil, import topsoil or manufactured topsoil.
- E. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath topsoil.

- F. On-site Topsoil: Naturally occurring, on-site, surface soil, usually occurring in the top four (4) to twelve (12) inches of original, undisturbed surface soil containing organic material, necessary nutrients and minerals to sustain plant growth and be approved to sustain plant life by an approved soil and plant lab.
- G. Substantial completion for landscape and irrigation: Work shall be considered substantially complete when irrigation, planting, turf planting and seeding are installed correctly per plans and specifications with only minor adjustments required and approval has been submitted in writing by Owner's Representative.
- H. Final completion for landscape and irrigation: Work shall be considered complete when irrigation, planting, turf planting and seeding are installed correctly per plans and specifications and the maintenance period has been completed per plans and specifications and approval has been submitted in writing by Owner's Representative.

1.4 SUBMITTALS

- A. Product and Material Data: For each type of product specified. Submit manufacturer's technical data and installation instructions for landscape products to include, but not be limited to:
 - 1. Analysis of proposed soil amending materials by Waypoint Analytical California, Inc. (408) 727-0330, or approved equal, made according to methods established by the Association of Official Analytical Chemists, where applicable.
 - 2. Samples for Verification: For each of the following:
 - a. Soil conditioner (1/2 c.f. each).
 - 3. Certification of turfgrass sod, identifying source, including name and telephone number of supplier.
 - 4. Material Test Reports: For on-site topsoil, import topsoil and/or manufactured soil proposed for use on this project.
 - 5. Planting soil amendments as recommended by Waypoint Analytical California, Inc. (408) 727-0330, or approved equal.
- B. Product Certificates: For soil amendments and fertilizers, signed by product manufacturer shall be delivered to Owner's Representative upon delivery.
- C. Qualification Data: For landscape Installer prior to performing work.
- D. Planting Schedule: Indicating anticipated planting dates for turf installation.

1.5 QUALITY ASSURANCE

A. Installer Qualifications:

1. Experience: The turf installation firm shall have contracted for and successfully completed construction of a minimum of five (5) California public school district construction projects, approved by the Division of the State Architect (DSA), within the past five (5) years of similar size, complexity, budget and scope.
2. Licensure: The turf installation firm shall hold a current, active C27 "Landscaping Contractor" license classification by the California State License Board that has been consistently active for at least five (5) years and that has not been suspended or revoked.
3. Supervision: The turf installation firm shall have a qualified and experienced turf technician on site during turf installation.

B. Soil-Testing Laboratory Qualifications: Testing lab shall be Waypoint Analytical California, Inc., located in San Jose (408) 727-0330 or Anaheim (714) 282-8777, or approved equal independent laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.

C. Soil Analysis: Furnish soil analysis by a qualified soil-testing laboratory, Waypoint Analytical California, Inc. (408) 727-0330, or approved equal, stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity (CEC) or total exchangeable cations (TEC); sodium absorption ratio; deleterious material; pH; soluble salts, boron, mineral and plant-nutrient content of planting soil.

1. Report suitability of planting soil for lawn growth. State recommended quantities of nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce a satisfactory planting soil.

E. Protect all lawn areas from damage or trespass by maintaining construction fencing during construction and maintenance.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Sod: Harvest, deliver, store, and handle sod according to requirements in Turf Producers International's (TPI) "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in its "Guideline Specifications to Turfgrass Sodding."

1.7 SCHEDULING

- A. Planting Restrictions: Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.
- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

1.8 LAWN MAINTENANCE

- A. Begin maintenance immediately after each area is planted and continue until acceptable lawn is established, but for not less than the following periods:
 - 1. Sodded Lawns: Maintenance period shall be a minimum of ninety (90) days from date of Owner's Representative written approval of Substantial Completion and when there are no visible joints, roots are thoroughly knit to the soil and sod appears to be uniformly healthy and green in color.
- B. Maintain and establish lawn by watering, fertilizing, weeding, mowing, trimming, replanting, and spraying for insects and disease and other operations. Roll, re-grade, and replant bare or eroded areas and re-mulch to produce a uniformly smooth lawn. Implement pest management as necessary to controls pests, including gophers.
 - 1. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch. Anchor as required to prevent displacement.
- C. Watering: Provide and/or maintain temporary piping, hoses, and lawn-watering equipment as necessary to convey water from sources and to keep lawn uniformly moist to a depth of 4 inches.
 - 1. Schedule watering to prevent wilting, puddling, erosion, and displacement of mulch.
 - 2. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
- D. Mow lawn as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one third (1/3) of grass height. Remove no more than one third (1/3) of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:
 - 1. Mow and edge before turf reaches three and one-quarter (3-1/4) inches high.
 - 2. Cut to two and one-half (2-1/2) inches high.
 - 3. Remove all clippings.

- E. Lawn Post-fertilization: Apply fertilizer after initial mowing and when grass is dry.
 - 1. Use fertilizer that will provide actual nitrogen of at least 1 lb/1000 sq. ft. to lawn area.
- F. Maintain protective barriers in place, erect and secure and clear of lawn edges to allow for uniform growth and for trimming and so as not to block irrigation spray pattern.

1.9 WARRANTY

- A. All work executed under this Section shall be warranted free of defects and poor workmanship for a period of one (1) year after date of Final Completion.
- B. Turf planting shall be warranted to be in healthy and thriving condition during Warranty period, except for defects resulting from neglect by Owner, abuse or damage by others, or unusual phenomena or incidents which are beyond Contractor's control.
- C. Repair and/or re-sod turf areas not in vigorous condition immediately upon notification by Owner's Representative during Warranty period.

PART 2 - PRODUCTS

2.1 TURFGRASS SOD

- A. Turfgrass Sod: Number 1 Quality/Premium, including limitations on thatch, weeds, diseases, nematodes, and insects, complying with TPI's "Specifications for Turfgrass Sod Materials" in its "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture, strongly rooted, and capable of vigorous growth and development when planted. Not less than 2 years old, free of weeds and undesirable native grasses and machine cut rolls to pad thickness of 5/8 inch, rolled, 4' wide and 90' length.
- B. Turfgrass Species: Sod of grass species as follows, with not less than 90 percent germination, not less than 95 percent pure seed, and free of weed seed:
 - 1. Blue-Rye or equal. www.deltabluegrass.com, (800) 637-8873.
 - a. Mixture of 50% bluegrass blend and 50% premium ryegrass blend.
- C. Delivery, Storage and Handling: Sod shall be harvested, delivered and installed within a period of 24 hours. Sod shall be kept moist, fresh and protected at all times.

2.2 PLANTING SOIL

- A. Prior to placing bid, Contractor to coordinate with General Contractor, Demolition and/or Grading Contractors and verify quantity and source of planting soil for turf planting areas. Identify Contractor responsible for stockpiling on-site topsoil and/or acquiring import planting soil and installing a minimum of six (6) inches of planting soil in turf planting areas and rough grading in accordance with these specifications, details, notes, grading and drainage plans.
- B. Coordinate with General Contractor, Demolition and/or Grading Contractors for removal and replacement of any lime treated soils and replacement with planting soil prior to planting turf to depth required to remove lime treatment.
- C. On-site topsoil: Reuse existing topsoil or existing surface soil, found in the top twelve (12) inches, excavated and stockpiled on-site. Verify suitability of existing and/or stockpiled surface soil to produce planting soil by submitting a sample to Waypoint Analytical California, Inc. (408) 727-0330, or approved equal. Acceptable on-site topsoil shall be ASTM D 5268, pH range of 6.0 to 7.0, representative of productive soils in the vicinity, a range of 4 to 20 percent organic material content; free of stones one (1) inch or larger in any dimension, roots, plants, sod, clay lumps and other extraneous materials harmful to plant growth. Sodium absorption rate (SAR) shall not exceed 5.0, conductivity of the saturation extract solution shall not exceed 3.0, and boron concentration in the saturation shall not exceed 1.0 ppm.
- D. Import Topsoil: Supplement with imported or manufactured topsoil from off-site, local sources, when quantities of on-site topsoil are insufficient. Do not obtain topsoil from bogs or marshes. If soil is obtained from agricultural land, Contractor shall submit proof soil is nematode free. Import topsoil shall meet the following requirements:
1. USDA Classification of fraction passing 2.0 mm sieve: sandy loam, sandy clay loam or loam.

Class	Particle Size Range	Maximum %	Minimum %
Coarse Sand	0.5 – 2mm	15	0
Silt	.002 - .05 mm	30	10
Clay	< .002 mm	25	10
Other Classes			
Gravel	2 – 13 mm	15	0
Rock	½ - 1 inch	5% by volume with none > 1 inch	
Organic		15	0

2. Chemistry – Suitability Considerations

Salinity: Saturation Extract Conductivity (ECe)	Less than 3.0 dS/m @ 25 degrees C.
Sodium: Sodium Adsorption Ratio (SAR)	Less than 1.00 ppm
Boron: Saturation Extract Concentration	Less than 6.00 ppm
Reaction: pH of Saturated Paste:	5.5 – 7.5 <u>without</u> high lime content.

3. Soil to contain sufficient quantities of available nitrogen, phosphorus, potassium, calcium and magnesium to support normal plant growth. In the event of nutrient inadequacies, provisions shall be made to add required materials prior to planting.
4. Soil testing: Contractor shall submit to the Owner's representative for approval, certification from an agricultural soils testing laboratory, Waypoint Analytical California, Inc. (408) 727-0330, or approved equal, that the import topsoil provided conforms to the specifications prior to delivery of import or placement of on-site topsoil. Soil testing shall have been performed on import topsoil source within the previous year.

2.3 FERTILIZER AND SOIL AMENDMENTS

- A. Contractor shall collect and submit two samples of proposed planting soil, representative of the top six (6) inches of planting soil, to a locally known soil testing laboratory, Waypoint Analytical California, Inc. (408) 727-0330, or approved equal, for analysis and amendment recommendations. Soil samples shall be taken from proposed planting areas or topsoil source. Sample shall be taken to a depth of 8 inches. Contractor shall amend per soil testing laboratory recommendations. Soil amendments in this specification are provided for bidding purposes only.
- B. Fertilizers: All fertilizers shall be of an approved brand with a guaranteed chemical analysis as required by USDA regulations and shall be dry and (except for plant tabs) free flowing.
- C. Soil Preparation: As specified in soil laboratory recommendation. The following materials and quantities are given for bidding purposes only. Contractor shall amend soil using products, quantities and methods specified by Waypoint Analytical California, Inc., or approved equal.
 1. 6-20-20 granular fertilizer.
 2. Soil sulfur.
- D. Soil Conditioner: 0-1/4 inch nitrogen-fortified organic amendment contributing at least 270 pounds of organic matter per cubic yard.

2.4 HERBICIDES

- A. All herbicides shall be approved by the District prior to use.
- B. Contractor shall contact Owner's Representative prior to application of herbicides for District policies, rules and regulations pertaining to herbicide application.
- C. Selective Herbicides: EPA registered and approved, of type recommended by manufacturer for application to remove broad-leaf weeds from existing turf.
- D. Non-selective Herbicides: EPA registered and approved, of type recommended by manufacturer for application to remove herbacious vegetation in areas indicated.

2.5 WATER

- A. Water shall be suitable for irrigation and free from ingredients harmful to sodded areas.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive lawns and grass for compliance with requirements and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. Planting operations shall be performed when weather and soil conditions are suitable for planting.

3.2 PREPARATION

- A. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- B. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
- C. Install protective barriers and/or fencing as necessary.
- D. Contact and obtain Owner's Representative, Local, State and Federal policies and procedures for regulating application of fertilizers, fungicides, insecticides, pesticides and herbicides. Contractor shall comply with all applicable policies and/or procedures for application, posting and notifications.

E. Import Planting Soil Installation:

1. Remove and dispose of stones larger than one (1) inch in any dimension, vegetation and foreign inorganic material from surface to receive import topsoil.
2. Scarify or plow the subgrade by crossripping or equivalent to a minimum depth of four (4) inches until it is loose and uncompacted to provide bonding of imported topsoil layer to subgrade.
3. Place topsoil on loosened material in six (6) inch layers. Crossrip first import topsoil layer to a depth of eight (8) inches and blend import topsoil with loose native surface soil. Roll lightly with appropriate lawn roller to consolidate topsoil and compact to 85% density.
4. Continue placement of import topsoil after blending first layer with native soil in six (6) inch layers and rolling lightly to consolidate and compact each layer of topsoil.
5. Place topsoil to the lines and grades in accordance with grading Drawings.

F. Verify installation of planting soil to minimum depth of six (6) inches and rough grading completed to proper slopes and elevations.

G. Verify lime treated soils have been removed and replaced with acceptable planting soil.

3.3 SOIL AMENDING AND FINE GRADING (Amend per Soil-Testing Laboratory recommendations. The following recommendations are given for bidding purposes only.)

- A. Soil Preparation: Loosen subgrade of planting beds by crossripping or equivalent cultivation to a minimum depth of ten (10) inches. Remove stones larger than one (1) inch in any dimension and sticks, roots, rubbish, and other extraneous matter in the top six (6) inches of soil and legally dispose of them off Owner's property.

- B. Soil Amending: (Amend per Soil-Testing Laboratory recommendations. The following recommendations are provided for bidding purposes only.) Add the following and thoroughly till into the top six (6) inches of planting soil at the following rates per 1,000 square feet. Till planting soil to a homogeneous mixture of fine texture, free of lumps, clods, stones, roots and other extraneous matter. Float, rake and roll all planter areas to establish finished grades, maintaining drainage patterns and swales for grading and drainage plans, creating smooth, uniform surface plane.
1. 6 cubic yards nitrogen fortified organic soil amendment.
 - a. In order to comply with MWEL 492.6, 3. (C). Soil Preparation, Mulch and Amendments, at a minimum, compost shall be applied at a rate of four (4) cubic yards per 1,000 square feet of permeable area incorporated to a depth of six (6) inches into the soil. Soils with greater than six percent (6%) organic matter in the top six (6) inches are exempt from adding compost.
 2. 14 pounds all-purpose granular fertilizer (6-20-20).
 3. 15 pounds soil sulfur.
- C. Fine Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Refer to civil grading plans and conform to designed grades, drainage patterns, swales, and ridges.
1. There shall be no areas that hold water or drain toward buildings or structures, unless designed per civil grading plans.
 2. In sodded turf areas, one (1) inch below adjacent paved surfaces, utility boxes, tops of curbs, etc.
- D. Moisten prepared lawn areas before planting if planting soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil conditions.
- E. Restore areas if eroded or otherwise disturbed after finish grading and before planting.

3.4 SODDING

- A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.
- B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to subgrade or sod during installation. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a smooth surface. Work sifted planting soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.
 - 1. Lay sod across angle of slopes exceeding 1:3.
 - 2. Anchor sod on slopes exceeding 1:6 with wood pegs or steel staples spaced as recommended by sod manufacturer but not less than 2 anchors per sod strip to prevent slippage.
 - 3. Hold sod clear of all tree trunks and tree staking, create a circular edge 12" clear of all tree trunks.
- C. Saturate sod with fine water spray within two hours of planting. During first week, water daily or more frequently as necessary to maintain moist planting soil to a minimum depth of 1-1/2 inches below sod.

3.5 SELECTIVE BROADLEAF WEED KILL

- A. Refer to herbicide manufacturer recommendations. Apply selective broadleaf herbicide where indicated prior to disturbing on-site soil per manufacturer recommendations. Re-apply as necessary for complete weed kill by end of maintenance period.

3.6 MAINTENANCE SCHEDULE

- A. Protection: Protect work from damage, erosion and trespass. Maintain construction fencing in proper condition. Remove temporary fencing and/or barriers prior to final completion and at end of maintenance period.
- B. Water: Contractor shall be solely responsible for ensuring that all planting is sufficiently watered to promote vigorous growth. Test and inspect irrigation system on a regular basis, each week during plant establishment and monthly thereafter. Adjust and repair the irrigation system and its components as necessary for turf establishment and growth and for watering efficiency. Check and adjust any obstructions to emission devices.

- C. Fertilizing (confirm with Soil and Plant Laboratory, or approved equal, recommendations):
Immediately after completion of planting, fertilize landscape areas with ammonium sulfate (21-0-0) fertilizer at a rate of five (5) pounds per 1000 square feet. Fertilize with specified fertilizer after 45 days, prior to end of maintenance period. After landscape becomes well-established, fertilize in fall and spring with (16-6-8) commercial fertilizer at a rate of six (6) pounds per 1000 square feet.
- D. Weed Control: Maintain turf planting areas in a weed-free condition to be performed weekly during maintenance period. Weeding may be done manually or by the use of selective herbicides. Contractor shall obtain written approval from project owner prior to application of herbicide. No herbicide shall be used without the Owner Representative's prior consent. Use only approved herbicides, use in accordance with manufacturer's recommendations and per Pest Control Advisor's recommendations. If selective herbicides are used, extreme caution shall be observed so as not to damage any other plants. Spraying shall be done only under windless conditions. Review and perform weekly during maintenance period.
- E. Lawns: Maintain lawns by watering, fertilizing weeding, trimming, mowing and other operations such as rolling, re-grading and replanting as required to establish a smooth, acceptable lawn, free of weeds, bare spots and rocks. All lawn areas shall be mowed regularly when grass reaches a height of three and one-quarter (3-1/4) inches and a minimum of two (2) days prior to end of maintenance period.
- F. Disease, Pest and Insect Control: Disease, pest (including moles, gophers and geese) and insect damage shall be controlled by the use of fungicides, insecticides, pesticides, poisons and/or mechanical means. Contractor shall obtain written approval from project Owner prior to application of fungicides, insecticides, poisons, pesticides and/or mechanical means and shall abide by all posting requirements prior to application. Review and perform weekly during maintenance period.

3.7 FIELD QUALITY CONTROL, SUBSTANTIAL COMPLETION AND FINAL COMPLETION

- A. Contact Owner's Representative a minimum of 48 hours prior notice for review and approval of the following prior to proceeding with subsequent work:
 - 1. Preparation: at completion of finish grading and prior to planting, grading tolerances and soil preparation shall be checked for conformance to Drawings and as specified herein.
 - 2. Layout: Layout of all plants, headerboard and other major elements shall be directed and/or approved by the Owner's Representative.

3. Substantial Completion Review (Pre-maintenance): At substantial completion of this Section, work shall be reviewed for conformance with the Drawings. Written approval shall mark beginning of the maintenance period.
 4. Final Completion Review: At the end of specified maintenance period, work shall be reviewed for conformance with Drawings including additional requirements stipulated during maintenance period shall be extended at Contractors sole cost as directed by the Owner's Representative.
 5. Re-inspections required due to Contractor not being prepared or non-conformance to Drawings shall be back charged to the Contractor.
- B. Satisfactory Sodded Lawn: At end of maintenance period, a healthy, well-rooted, even-colored, viable lawn has been established, free of weeds, open joints, bare areas, and surface irregularities.
- C. Reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory and upon written approval of Owner.
- 3.8 CLEANUP AND PROTECTION
- A. Promptly remove soil and debris created by lawn work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Erect barricades and warning signs as required to protect newly planted areas from traffic. Maintain barricades throughout maintenance period and remove after lawn is established.
- C. Remove erosion-control measures after grass establishment period

END OF SECTION 32 92 00

(Revised 1/30/2024)

SECTION 33 20 00
STORM DRAINAGE

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Quality Assurance.
- B. Specified Products.
- C. Execution of Storm Drain Lines
- D. Cleaning and Testing.

1.02 RELATED SECTIONS

- A. Section 31-2000 – Earthwork General Provisions
- B. Section 31-6000 – Trenching, Backfill, and Compaction

1.03 REFERENCES

- A. CSS- CALTRANS STANDARD SPECIFICATIONS
 - 1. Section 10 & 18, Dust Control.
 - 2. Section 19, Earthwork.
 - 3. Section 21, Erosion Control.
 - 4. Section 72, Slope Protection.
 - 5. Section 64, Plastic Pipe.
 - 6. Section 65, Reinforced Concrete Pipe.
 - 7.
- B. California Division of Safety and Health Construction Safety Orders
 - 1. Section 1504, Definitions
 - 2. Section 1539 through 1547

1.04 WORK INCLUDED

- A. Trenching and other excavation.
- B. Ground water control.
- C. Pipe bedding.
- D. Installation of storm drains and appurtenances.
- E. Backfill and compaction of backfill.
- F. Cleaning and televised testing for storm drains.
- G. Dust alleviation and control.
- H. Cleanup and restoration of surface in improved areas.
- I. The work shall include the provision of all materials, equipment and apparatus not specifically mentioned herein or noted on the plans, but which are obviously necessary to complete the work specified.

1.05 QUALITY ASSURANCE

- A. All work shall be done to the satisfaction of the designated representative of the Geotechnical Consultant, and shall meet the approval of the Engineer.

- B. Percentage of compaction specified shall be the minimum acceptable. The percentage represents the ratio of the dry density of the compacted backfill material to the maximum dry density of the material as determined by the procedure set forth in ASTM Designation D1557.
- C. D-Load or class of pipe requirements shown or called for on the plans shall be the minimum acceptable.
- D. The maximum allowable deflection (out of roundness) of PVC pipe shall be 5% or the manufacturer's recommended maximum, which ever is smaller.

1.06 JOB CONDITIONS

- A. Contractor shall conduct operations and schedule cleanup in a manner to cause the least possible obstruction and inconvenience to traffic, pedestrians, and any adjacent property owners, or tenants.
- B. Contractor shall protect open excavations, trenches and such with covers, railings and fences as required together with signs, lights, and other warning devices sufficient to protect and maintain safe pedestrian, bicycle, or vehicular traffic through the work to the satisfaction of the Engineer.
- C. Contractor shall conduct operations in such a manner that existing facilities and utilities which are to remain in place will not be damaged. Excavation, trenching and other work under or adjacent to existing pipelines, conduit runs, or structures of any kind, shall be prosecuted in such a manner as not to interfere with the safe operation and use of such installations. Contractor, at his expense, shall furnish and install sheet piling, cribbing, shoring, or whatever means may be necessary to adequately support material carrying such facilities or to support the facilities themselves and shall maintain such supports until they are no longer needed. The installation and removal of such supports shall be performed in a manner which does not disturb the line, grade or operation of the facilities or utilities being installed or adjacent to the installation. Should any damage to existing facilities or structures be incurred during the operations of the Contractor, he shall immediately notify the proper owners or authorities, and shall arrange for the immediate repair of the facilities at his own expense. Temporary pavements, facilities, utilities, and other installations shall also be protected until they are no longer required. When temporary supports and other protective means are no longer required, they shall be removed and disposed of as directed by the Engineer.
- D. Locations of existing underground utilities and structures, insofar as they are known from information available from records and from the respective public utility companies, have been shown on the plans. The Engineer assumes no responsibility for the accuracy or completeness of said data, which is offered solely for the convenience of the Contractor. It shall be the Contractor's responsibility to verify the location of these obstructions and to locate any other underground utilities and structures which might necessitate a change in the location, line or grade of the new work prior to commencement of the new work.
- E. During trenching operations, the Contractor shall furnish, install, and operate adequate pumps or other devices as may be necessary to remove any seepage, storm water, or sewage that may be encountered during the progress of the work. All excavations shall be kept free from water during bedding, pipe laying, initial backfilling and when concrete is being placed, and thereafter until such water will do no damage to the work.
- F. Damage resulting from movement of the sides or bottom of trenches or other excavation which is attributable to the Contractor's acts or omissions, whether sides are braced or not, and any portions of

the area and work affected by such movement, shall be repaired or restored by the Contractor. This restoration shall be at the Contractors expense and to the satisfaction of the Geotechnical Consultant and the Engineer.

PART 2 - PRODUCTS

2.01 REINFORCED CONCRETE PIPE

- A. Reinforced concrete pipes for storm drains equal to or greater than 12 inches in diameter shall be bell and spigot-type pipe. The Pipe shall conform to the requirements of ASTM Designation C76 except that all pipe shall have been manufactured using Portland cement conforming to the requirements of ASTM Designation C150 for Type II cement. The size and D-Load classification of the pipe shall be as designated on the plans.
- B. All reinforced concrete pipe shall have captive rubber gasket joints that are self-centering and so designed that after the joint is made up, the rubber gasket shall not be required to support the weight of the pipe. Spigot grooves shall be provided in all joints, and the joint and gasket shall conform to the requirements of ASTM Designation C443.
- C. Short pipe lengths not exceeding six (6) feet shall be furnished and installed at all connections to structures and appurtenances for pipe diameter installations of twenty-four (24) inches or less. Said short pipe length shall extend a minimum of one pipe length beyond the structure or appurtenance. Standard pipe lengths not exceeding twenty (20) feet shall be furnished and installed for all other installations.
- D. Pipe shall be cured by water curing, steam curing, or a combination of both as required to produce the D-Load strengths shown, noted or called for on the plans.
- E. Pipe strength requirements shall be designated in terms of D-Load as shown or called for on the plans. D-Load as used herein is defined as the maximum load the pipe will sustain per foot of length per foot of internal diameter under the standard three-edge bearing test without the appearance of any crack one one-hundredth (0.01) inch in width exceeding twelve (12) inches in length when testing in accordance with the procedure set forth in ASTM Designation C497.
- F. Each section of pipe shall be clearly and legibly marked with waterproof paint to show the date of manufacture, the D-Load classification of the pipe, and the location of the minor axis if elliptical reinforcement has been used in the manufacture of the pipe.
- G. Manufacturer's certificates showing conformance with this specification and the results of external load crushing strength tests made in conformance with the criteria established in ASTM Designation C497 shall be delivered to the Engineer with each load of pipe delivered to the job site. The Engineer may, at his own option, require that external load crushing strength tests in conformance with the requirements of ASTM Designation C497 be made in his presence from random samples taken from each pipe delivery. All costs of any such tests shall be deemed as included in the unit price bid for the pipe in place.

2.02 MORTAR FOR RCP JOINTS

- A. Joint mortar shall consist of one (1) part Portland cement conforming to the requirements of ASTM Designation C150 for Type V cement with two (2) parts of mortar sand by volume. Sand shall be well graded and of such size that all will pass a No. 8 sieve.
- B. Mortar materials shall be mixed to a consistency suitable for making joints on concrete pipe and all mortar shall be used within thirty (30) minutes after mixing water has been added.
- C. Admixtures shall not be added to mortar without the prior approval of the Engineer.

2.03 PVC STORM DRAIN PIPES

- A. PVC storm drain pipe for minor storm drains equal to or less than (12) inches in diameter shall be used where indicated on the plans and shall conform to the requirements of ASTM Designation D3034 for SDR 35 pipe. The bell section of the pipe shall consist of an integral wall section with a solid cross-section rubber ring conforming to ASTM F-477, factory assembled and securely locked in place to prevent displacement during assembly.
- B. Manufacturer's certificates showing conformance with this specification shall be delivered to the Engineer with each shipment delivered to the job site.

PART 3 EXECUTION

3.01 TRENCHING AND EXCAVATION

- A. Trenches may be excavated either by hand, or by machine; and excavation shall begin at the outlet end and proceed upgrade. Excavations shall be sloped or otherwise supported in a safe manner in accordance with applicable State safety requirements and the requirements of OSHA Safety and Health Standards for Construction (29CFR1926). Such trenches shall be cut with sufficient width to provide adequate for working therein. Such space shall be a minimum clear distance of 6" and a maximum of 12" on each side of the pipe barrel for RCP and PVC non-sheet piled installations. There shall be a minimum clear distance of 2-1/2 pipe diameters and a maximum of 3-1/2 pipe diameters clear of shoring on each side of the pipe barrel for PVC and RCP pipe installations when sheet piling is used. Glory hole excavation, will not be allowed. Trench sides shall be parallel to and at equal distance from the centerline of the pipe, when aligned in conformity with the plans.
- B. Where the Contractor, in excavating trenches, exceeds the widths specified above, he shall furnish at his own expense, higher strength pipe, or other methods of construction as approved by the Engineer, to adequately provide for the increased loading, which the trench widening will cause.

3.02 BRACING AND SHORING

- A. The Contractor shall furnish, place and maintain such bracing and shoring as may be required to support the sides of the excavations for the proper protection of workmen; to facilitate the work; to prevent damage to the pipes and appurtenances being constructed; and to prevent damage to adjacent structures or facilities. Upon completion of the work, all bracing and shoring shall be removed, unless otherwise directed by the Engineer.
- B. The Contractor shall be solely responsible for all bracing and shoring and shall, if required, submit an application and supporting data for an effective shoring system to the Engineer. The Engineer may

forward the application to the California Division of Industrial Safety for their review. The Contractor's application shall include the basic design, assumed soils conditions and estimation of forces to be resisted, together with plans and specifications of the materials and methods to be used, and shall be prepared by a Civil Engineer registered in California. No excavations in trench section nor around structures shall precede the return of an approved application, if required.

- C. Trenches or other excavation where the distance from the roadway subgrade to the bottom of the excavation exceeds eight (8) feet shall be solid sheathed. Said sheathing shall be designed to resist the pressure imposed by a fluid having a density of at least one hundred (100) lbs. per cubic foot for the full height of the trench and shall be installed for the full depth of trench and to a sufficient depth below the bottom of the excavation to prevent heaving of the bottom, and shall be adequately supported in place with walers and braces.
- D. Mandatory use of solid sheathing at designated locations shall not relieve the Contractor of the responsibility to install sheathing at other locations required by the Geotechnical Consultant or where necessary for safety of workmen or the general public.
- E. Sheathing shall be withdrawn only after backfill above pipe has proceeded to a height equal to or greater than 3/4 of the excavation depth. Bottom cross-bracing and walers may be left in place upon removal of the sheathing. Backfill shall be brought to the level of the cross braces before these are removed.
- F. The Contractor is solely responsible for installing and extracting the sheathing in a manner which will not disturb the line, grade, or backfill compaction or operation of the utility being installed or adjacent utilities and facilities.

3.03 BACKFILLING

- A. Initial backfill for storm drains shall be carefully packed under the haunches of the pipe and brought up simultaneously on both sides, so as to obviate any displacement of the pipe from its true alignment. The initial backfill shall be compacted in layers not more than eight (8) inches in thickness, in a manner that will preclude moving the pipe, to not less than 90% of maximum dry density as determined by the procedure set forth in ASTM Designation D1557. Jetting or ponding of backfill material will not be permitted.
- B. Subsequent backfill (imported fill material) shall be placed in loose lifts not exceeding eight (8) inches in thickness before compaction, and compacted by the use of pneumatic tampers or other mechanical means approved by the Geotechnical Consultant. Each layer shall be watered or dried, as required to bring the soils as close as practical to the optimum moisture content for proper compaction. Compaction equipment or methods that produce horizontal or vertical earth pressures which may cause excessive displacement or may damage the pipeline will not be permitted. Lifts of backfill material shall be compacted to not less than 90% of maximum dry density as determined by the procedure set forth in ASTM Designation D1557 and 95% within upper six (6) inches of subgrade in parking and driveway areas. Jetting or ponding of backfill material will not be permitted.
- D. Storm drain backfill shall be inspected and tested by the Geotechnical Consultant during placement. Contractor shall cooperate with the Geotechnical Consultant and shall provide working space for such tests in operations. Backfill not compacted in accordance with these specifications shall be

recompacted or removed as necessary and replaced to meet the specified requirements; to the satisfaction of the Geotechnical Consultant prior to proceeding with the Work.

3.04 PIPE INSTALLATION

- A. Installation: Storm drain pipe and appurtenances shall be installed in accordance with the best practice, and in conformance with the applicable requirements of Section 65-1.07 of the State Standard Specifications. Underdrain pipe and appurtenances shall be installed in accordance with the best practice, and in conformance with the applicable requirements of Section 68-1.03 of the State Standard Specifications.
- B. Handling: Pipe shall be carefully handled during hauling, unloading, and placing operations, so as to avoid breakage or damage. Strap type slings shall be used for lifting and placing; no chains or hooks will be permitted. Broken or damaged pipe or appurtenances will be rejected and shall be replaced by the Contractor at no additional expense to the Contract.
- C. Alignment: All pipe shall be accurately laid in conformity with the prescribed lines and grades as established by the Engineer in the field. Each length shall be jointed to preceding section as specified, and after said jointing has been completed, there shall be no movement of the pipe in subsequent operations.
- D. Pipe Deflections: The laying of the pipe on curved alignment by means of asymmetrical closure of joints, will be permitted only when necessary to conform with the alignment shown or called for on the plans. Grade breaks indicated on the plans shall be accomplished by a symmetrical closure of pipe and **NOT** by means of fittings.
- E. Cleaning: Before each new length of pipe is placed, the interior of the preceding pipe shall be carefully cleaned of all dirt and debris. When pipe laying is not in progress, all open pipe ends shall be closed with watertight plugs in a manner satisfactory to the Engineer.
- F. Bearing: Pipe in the trench shall have continuous uniform bearing along its bottom, except at bell holes. Before lowering pipe into the trench, the Contractor shall remove all stakes, debris, loose rock and other hard material from the bottom of the trench.
- G. Positioning: After the final positioning, pipe shall be held in place in the trench with cover material placed equally on both sides of the pipe at as many locations as required to hold the pipe section in place. After joints are completed, the cover material shall be redistributed and compacted as herein required.
- H. Closure: At the end of each day and when work is not in progress, the open ends of pipe installed in the line shall be closed with plugs and openings for appurtenances shall be suitably covered to the satisfaction of the Engineer.

3.05 CONNECTIONS

- A. Contractor shall make all required connections to existing facilities and improvements at no additional cost, and compensation for such work shall be deemed as included in the price bid for pipe installation.
- B. All connections to manholes shall be constructed with concrete channels directed toward outlet pipe as shown and detailed on the plans.

- C. Break-out holes in manholes for connecting new pipe shall be grouted all around to prevent ground water infiltration. Pipes shall be cut off flush with the inside surface of the manhole.

3.06 STRUCTURES

- A. Structures and appurtenances shall be installed at the location and to the lines and dimensions shown on the plans and detail drawings, and as established by the Engineer. The installation of structures and appurtenances shall immediately follow the completion of the pipe laying operations.
- B. Structures shall be constructed and/or installed in conformance with the applicable requirements of Section 51 of the State Standard Specifications. Unless otherwise noted on the plans or detail drawings, all exposed surfaces of poured in place structures and appurtenances shall have a Class 1 surface finish.
- C. Precast structures and appurtenances shall be accurately assembled with full mortar bed joints.
- D. Frames for manholes and tops of catch basins, inlets and other structures in paved areas shall be accurately placed flush with and in the plane of the finish pavement. Tops of inlets and structures in unpaved areas shall be constructed to the grades shown or called for on the plans and established by the Engineer. Manhole frames in new roadway subgrade shall be brought to finish pavement plane and grade immediately prior to the final paving operation. All manhole frames in paved areas shall be secured by means of concrete frame anchor slabs as shown and detailed on the plans and detail drawings.

3.07 CLEANING PVC STORM DRAINS

- A. Contractor shall flush and clean all storm drains 12 inches in diameter and smaller by means of pneumatic, sewer cleaning balls. The balls shall be of the appropriate size to fit the storm pipe being cleaned. "Storm Balling" operations shall be conducted by experienced personnel under the supervision of the Engineer. The ball shall be introduced at the uppermost structure and passed from structure to structure by means of a line with sufficient head of water to carry the ball along. The movement of the ball shall be controlled by a rope; care shall be exercised not to feed the ball too rapidly in order that all debris can be removed at each manhole.
- B. Each section of the storm line shall be thoroughly cleaned before proceeding to the next section. Where sewer balls will not pass, flexible sewer rods with approved spears or cutters may be used to clear the obstruction. Where obstructions cannot be cleared by sewer rodding, or where the pipe has deflected more than that allowable herein, the obstructions shall be removed, or the pipe replaced by excavation at the Contractor's expense. The Contractor shall remove all debris from sewer lines using methods satisfactory to the Engineer.
- C. Water for storm drain flushing and cleaning operations shall be provided and paid for by the Contractor at no additional expense to the Contract.

3.08 TELEVISED TESTING OF PVC STORM DRAINS

Not Required.

3.09 STORM DRAIN PLUGS

STORM DRAINAGE

- A. Where called for on the plans or directed by the Engineer, plugs shall be placed in open ends of storm drains. Plugs shall consist of a brick and mortar wall not less than eight (8) inches in thickness for RCP pipe and prefabricated PVC plugs for PVC pipe, constructed in such a manner as to ensure a watertight seal. Mortar for plugs shall conform to the requirements of Paragraph 2.02 hereof. Temporary plugs shall consist of removable PVC caps.

3.10 RESTORATION OF EXISTING SURFACING

- A. Existing paving or other improvements removed or damaged due to the installation of storm drains or appurtenances shall be replaced in kind to the satisfaction of the Engineer at no additional expense to the Contract.
- B. Existing landscaping or planting removed, damaged or disturbed due to the installation of storm drains or appurtenances shall be replaced in kind to the satisfaction of the Engineer at no additional expense to the Contract.

3.11 DUST ALLEVIATION AND CONTROL

- A. Contractor shall be responsible for and shall provide pollution and dust abatement and control measures satisfactory to the Engineer continuously during the course of the Work.

3.12 CLEANUP

- A. Upon completion of storm drain construction operations all lines, manholes, catch basins, inlets and other structures shall be thoroughly cleaned of dirt, rubbish, debris and obstructions of any kind to the satisfaction of the Engineer. The entire work site shall be cleaned of all waste, rubbish and construction debris of any nature to the satisfaction of the Engineer.
- B. Other surplus materials remaining upon completion of the work shall become the property of the Contractor unless otherwise specified herein or noted on the plans. Surplus materials shall be removed from the work site by the Contractor and disposed of outside the district in a lawful manner to the satisfaction of the Engineer.

END OF SECTION 33 20 00

**SECTION 33 50 00
CLEAN DRAIN ROCK**

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. This section defines the material requirements for Clean Drain Rock.

1.02 REFERENCES

- A. AASHTO T-96: Standard Test Method for Resistance to degradation of Small-Size Coarse aggregate by Abrasion and Impact in the Los Angeles Machine.
- B AASHTO T-27: Standard Method for Sieve Analysis of Fine and Coarse Aggregates.

1.03 DEFINITIONS

- A. Clean Drain Rock: Backfill Material, which is mechanically graded and is used to conduit free water from a surrounding area to a surface area, or to another conduit such as a slotted or perforated pipe.

1.04 SUBMITTALS

- A. Material analysis of the clean drain rock to be used.

1.05 ACCEPTANCE

- A. Engineer or his/her designated representative reserves the right to select, reject, and test backfill on a random basis from any location in the Work, or from the backfill source.

PART 2 - PRODUCTS

2.01 AGGREGATES

- A. Clean, hard, tough, durable, and sound mineral aggregates that consist of 95% crushed stone, crushed gravel or crushed slag; free of deleterious and organic matter; and complies with the following:
 - 1. Aggregate Wear Under AASHTO T-96: Less than 50 percent
 - 2. Material shall be classified as A-1 material
 - 3. Aggregates shall be per the master grading band limits. The following limits are based on fine and coarse aggregate having approximately the same bulk specific gravities. The Limits are wider than necessary for good job control. Sieve gradations are based upon percent of aggregate passing by weight in accordance with AASHTO T-27.

MASTER GRADING BAND LIMITS									
SIEVE SIZE	UNTREATED BASE COURSE						PEA GRAVEL		
	Type 1 - ½		Type 1		Type ¾				
	Min	Max	Min	Max	Min	Max	Min	Max	
1-1/2"	100	--	--	--					
1"	--	--	100	--					
3/4"	81	91	--	--	100	--	--	--	
1/2"	67	77	79	91	--	--	--	--	
3/8"	--	--	--	--	78	92	--	--	
No. 4	43	53	49	61	55	67	100	--	
No. 16	23	29	27	35	28	38	--	3	
No. 200	6	10	7	11	7	11	--	2	

2.02 DRAIN ROCK

- A. Consist of hard, durable particles of stone or gravel, screened or crushed to specified size and graduation.
- B. Free from vegetable matter, lumps or balls of clay, or other deleterious matter.
- C. Crush or waste coarse material and waste fine material as required to meet gradation requirements.
- D. Durability Index: Percentage of wear not greater than 40 percent when tested in accordance with AASHTO T-96.
- E. Conform to size and grade within the limits as follows when tested in accordance with AASHTO T-27.

SIEVE SIZE	PERCENT BY WEIGHT
(Square Openings)	PASSING SIEVE
2 inch	100
1-1/2 inch	95 - 100
3/4 inch	50 - 100
3/8 inch	15 - 55
Number 4	0 - 25
Number 8	0 - 5
Number 200	0 - 2

2.03 GRAVEL

- A. Consist of hard, durable particles or fragments of stone or gravel, screened or crushed to specified sizes and gradations.
- B. Free from vegetable matter, lumps or balls of clay, alkali, adobe, or other deleterious matter.
- C. When sampled and tested in accordance with specified test methods, material shall comply with the following requirements:
 - 1. Durability index: Percentage of wear not greater than 40 percent after 500 revolutions when tested in accordance with ASTM C131.
 - 2. Plasticity Index: Not greater than 5 when tested in accordance with ASTM D 4318.
 - 3. Liquid Limit: Not greater than 25 percent when tested in accordance with ASTM D 4318.
- D. Conform to sizes and grade within the limits as follows when tested in accordance with ASTM C 136 and ASTM C 117:

SIEVE SIZE	PERCENT BY WEIGHT
(Square Openings)	PASSING SIEVE
3 inch	--
1-1/2 inch	100
Number 4	30 - 70
Number 8	20 - 60
Number 30	10 - 40
Number 200	0 - 12

PART 3 EXECUTION

3.01 INSTALLATION

- A. Excavation and Backfill Operations: In accordance with Section 31-4000.

END OF SECTION 33 50 00