

**ATHLETIC FACILITIES IMPROVEMENT  
PROJECT #K11 KENTFIELD CAMPUS**

**PROJECT MANUAL**

**BID NUMBER: #17/18-MB2**

**MARIN COMMUNITY COLLEGE DISTRICT**

**July 17, 2017**

**Mandatory Conference/Walk: Tuesday, August 8, 2017 at 10:00a.m.  
Location: 835 College Ave., Physical Education Bldg Room 61,  
Kentfield Campus, Kentfield CA 94904**

**Proposal Due Date and Time: Thursday, August 24, 2017  
Received by 2:00 p.m.  
Location: 1800 Ignacio Blvd., Fiscal Services, Building 8,  
Indian Valley Campus, Novato CA 94949**

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**NOTICE TO BIDDERS**

1. Notice is hereby given that the governing board ("Board") of the Marin Community College District ("District") will receive sealed bids for the following project,

**Bid No.: #17/18 – MB2,  
Project: ATHLETIC FACILITIES IMPROVEMENT - #K11**

2. The Project consists of:

Soccer/Lacrosse: Replacement of existing natural turf field with a new synthetic turf field. Installation of an all-weather synthetic track surface D-Zone with new long jump/triple jump events. Work includes improvements to existing drainage, electrical and irrigation system. Installation of Owner Furnished, Contractor Installed scoreboard.

Tennis Courts: Removal of existing field house and gravel storage area and installation of six (6) new tennis courts, court facility, perimeter fencing, gravel pathway, drinking fountain, site furnishing and new drainage system.

Sand Volleyball/Futsal Field: Removal of existing tennis courts and installation of new sand volleyball facility and synthetic turf futsal field. Work includes new concrete bleachers, perimeter fencing, utility systems and site furnishing.

Removal of existing synthetic grounds, clear and grubbing of landscaping and installation of new synthetic turf to the physical education building courtyards.

3. To bid on this Project, the Bidder is required to possess one or more of the following State of California Contractor Licenses:

**A or 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. The Bidder's registration must remain active throughout the term of the Contract.

5. Contract Documents are available on July 21, 2017, for review at the District Fiscal Services Office, Building 8, 1800 Ignacio Blvd, Novato, California, 94949 . In addition, Contract Documents are available for bidders' review at the following:

District Fiscal Services website: <http://fiscal.marin.edu/bids>  
Builders' Exchanges.

6. Contract Documents are also available for purchase for one hundred dollars (\$ 100.00) at the District Fiscal Services Office. This fee is refundable if the Contract Documents are returned in clean condition back to the District Fiscal Services Office no later than ten (10) calendar days after the date of the bid opening.

7. Sealed Bids will be received no later than **2:00 p.m., August 24, 2017**, at the **District Buyer Office, College of Marin Indian Valley Campus, 1800 Ignacio Blvd., Building 8, in AS Room 130, Novato, California, 94949**, at or after which time the bids will be opened and publicly read aloud. Any bid that is submitted after this time shall be non-responsive and returned to the bidder. Any claim by a bidder of error in its bid must be made in compliance with section 5100 et seq. of the Public Contract Code. **Note: It is the responsibility of the bidder to make sure the bid is delivered to the address listed above. Please be informed that UPS does not deliver directly to this physical address.**
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. All items on the form shall be filled out in ink. Numbers shall be stated in figures and the signature of all individuals must be in long hand. The completed form shall be without interlineations, alternations, or erasures.
9. A bid bond by an admitted surety insurer on the form provided by the District, cash, or a cashier's check or a certified check, drawn to the order of the Marin Community College District, in the amount of ten percent (10%) of the total bid price, shall accompany the Bid Form and Proposal, as a guarantee that the Bidder will, within seven (7) calendar days after the date of the Notice of Award, enter into a contract with the District for the performance of the services as stipulated in the bid.
10. A mandatory pre-bid conference and site visit will be held on **Tuesday, August 8, 2017**, at **10:00 a.m.** at **835 College Ave., Physical Education Bldg Room 61, Kentfield, California, 94904**. All participants are required to sign in at the conference at Physical Education Building, Room #61, Kentfield, California. The Site Visit is expected to take approximately one (1) hour. Failure to attend or tardiness will render bid ineligible. 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.
11. Process and deadline for Bid Questions: All questions must be writing, emailed to the District's Project Manager Paul Lum at [plum@gilbaneco.com](mailto:plum@gilbaneco.com), with a copy email to Mayra Ramirez, Buyer (Bond B) at [mramirez@marin.edu](mailto:mramirez@marin.edu). The deadline to submit questions is 3:00 p.m. on August 15, 2017. A question form is included, see Document 00 31 07. If you do not use the question form, you must still include the same details in your question that are requested by the form. Do not direct questions to any other person associated with this project; such action will only slow the District's ability to respond to your inquiry.
12. Bid Questions Interpretations or clarifications: Interpretations or clarifications considered necessary by District in response to such questions will issued in writing by Addenda. Addendums are posted on the District's website and it's the responsibility of the bidding Contractor's to check the District's website for any and all addenda at <http://fiscal.marin.edu/bids>.
13. 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.

14. The District has elected to provide an owner-controlled or wrap-up insurance program (OCIP). The successful Bidder and its subcontractor shall be required to participate in and comply with the OCIP.
15. 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.
16. 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 sections 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>>.
17. 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 Contractor and all Subcontractors under the Contractor shall furnish electronic certified payroll records directly to the Labor Commissioner weekly or within ten (10) days of any request by the District or the Labor Commissioner. The successful Bidder shall comply with all requirements of Division 2, Part 7, Chapter 1, of the Labor Code.
18. 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.
19. 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.
20. Engineer's Estimate for the project is \$3,700,000.00

**END OF DOCUMENT**



## DOCUMENT 00 11 00

**INSTRUCTIONS TO BIDDERS**

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

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

1. Bids are requested for a general construction contract, or work described in general, for the following project:

**Athletic Facilities Improvement - #K11, Kentfield Campus.**

2. District will receive sealed Bids from Bidders as stipulated in the Notice to Bidders.
3. Bidders must submit Bids on the Bid Form and Proposal and all other required District forms. Bids not submitted on the District's required forms shall be deemed non-responsive and shall not be considered. Additional sheets required to fully respond to requested information are permissible.
4. 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. Bid Bond on the District's form or other security.
  - b. Designated Subcontractors List.
  - c. Site-Visit Certification.
  - d. Non-Collusion Declaration.
5. Bidders must submit with their Bids cash, a cashier's check or a certified check payable to District, or a bid bond by an admitted surety insurer of not less than ten percent (10%) of amount of base Bid, plus all additive alternates. If Bidder chooses to provide a Bid Bond as security, Bidder must use the required form of corporate surety provided by District. The Surety on Bidder's Bid Bond must be an insurer admitted in the State of California and authorized to issue surety bonds in the State of California. Bids submitted without necessary bid security will be deemed non-responsive and will not be considered.
7. If Bidder to whom Contract is awarded fails or neglects to enter into 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, cash, 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.

8. 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. All of the listed subcontractors are required to be registered as a public works contractor with the Department of Industrial Relations. The subcontractor's registration must remain active throughout the term of the Contract. Failure to submit this list when required by law shall result in Bid being deemed non-responsive and the Bid will not be considered.
  - a. An inadvertent error in listing the California contractor license number on the Designated Subcontractors List shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive if the correct contractor's license number is submitted to the District within 24 hours after the bid opening and the corrected number corresponds with the submitted name and location for that subcontractor.
  - b. An inadvertent error listing an unregistered subcontractor shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive provided that any of the following apply:
    - (1) The subcontractor is registered prior to the bid opening.
    - (2) The subcontractor is registered and has paid the penalty registration fee within 24 hours after the bid opening.
    - (3) The subcontractor is replaced by another registered subcontractor pursuant to Public Contract Code section 4107.
9. If a mandatory pre-bid conference and site visit ("Site Visit") is requested 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.
10. Bidders shall submit the Non-Collusion Declaration with their Bids. Bids submitted without the Noncollusion Declaration shall be deemed non-responsive and will not be considered.
11. Bids shall be clearly written without erasure or deletions. District reserves the right to reject any Bid containing erasures or deletions.
12. Bidders shall not modify the Bid Form and Proposal or qualify their Bids. Bidders shall not submit to the District a scanned, re-typed, word-processed, or otherwise recreated version of the Bid Form and Proposal or other District-provided document.

13. The Bidder 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 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 State of California 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>.
14. The District has elected to provide an owner-controlled or wrap-up insurance program (OCIP). The policy limits, known exclusions, and the length of time the policy is intended to remain in effect provided by the OCIP are described in the OCIP Manual. The District will require all bidders at a minimum to have no serious and willful violations of Labor Code section 6300 et seq., have a workers' compensation experience modification factor of 1.00 or less, and have an injury prevention program instituted pursuant to Labor Code section 3201.5 or 6401.7.
15. Bidders 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;

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- 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 thereof by the District is 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;
  - e. 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.
  - f. 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 Contractor 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 Contractor is required to make such verification as a condition to bidding. In submitting its Bid, Contractor shall rely on the results of its own independent investigation. In submitting its Bid, Contractor 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, Contractor 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 of Contractor 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).

- g. 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, Contractor may not in any manner rely on the information in these reports and drawings. Subject to the foregoing, Contractor must make its own independent investigation of all conditions affecting the Work and must not rely on information provided by District.
16. 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.
17. All questions about the meaning or intent of the Contract Documents are to be directed in writing to the District. Interpretations or clarifications considered necessary by the District in response to such questions will be issued in writing by Addenda emailed, faxed, mailed, or delivered to all parties recorded by the District as having received the Contract Documents. 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.
18. Addenda may also be issued to modify other parts of the Contract Documents as deemed advisable by the District.
19. 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.
20. 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. 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 request for substitution a minimum of **TEN (10)** calendar days prior to bid opening.
  - b. Within 35 days after the date of the Notice of Award, the Successful Bidder shall submit data substantiating a request for substitution 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.
21. All Bids must be sealed, and marked with name and address of the Bidder and the Project Number, Bid number, Bid package, and time of bid opening. Bids will be received as indicated in the Notice to Bidders.
- a. Mark envelopes with the name of the Project.
  - b. Bids must be submitted to the District Buyer Office, College of Marin Indian Valley Campus, 1800 Ignacio Blvd., Building 8, in AS Room 130, Novato, California, 94949, by date and time shown in the Notice to Bidders.
  - c. Bids must contain all documents as required herein.
22. Bids will be opened at or after the time indicated for receipt of bids.
23. 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.
24. 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.

25. Time for Completion: District may issue a Notice to Proceed within **THREE (3)** months 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 3-month 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 3-month 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 3-month 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.
26. The Bidder to whom Contract is awarded shall execute and submit the following documents by 5:00 p.m. of the **SEVENTH (7<sup>th</sup>)** 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 non-responsive.
- a. Agreement: To be executed by successful Bidder. Submit four (4) copies, each bearing an original signature.
  - b. Escrow of Bid Documentation: This must include all required documentation. See the document Escrow of 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 (100%) (Contractor's Labor and Material Bond): On the form provided in the Contract Documents and fully executed as indicated on the form.
  - e. Insurance Certificates and Endorsements as required.

- 
- f. Workers' Compensation Certification.
  - g. Prevailing Wage and Related Labor Requirements Certification.
  - h. Drug-Free Workplace Certification.
  - i. Tobacco-Free Environment Certification.
  - j. Hazardous Materials Certification.
  - k. Lead-Based Paint Certification.
  - l. Imported Materials Certification.
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 (3<sup>rd</sup>)** 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 other bases for protest, an inadvertent error in listing the California contractor license number on the Designated Subcontractors List shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive if the correct contractor's license number is submitted to the District within 24 hours after the bid opening and the corrected number corresponds with the submitted name and location for that subcontractor.
    - (2) Without limitation to other bases 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. District reserves the right to reject any or all bids, including without limitation the right to reject any or all nonconforming, non-responsive, 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 inconsequential deviations not involving price, time, or changes in the Work. 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.
29. Discrepancies between written words and figures, or words and numerals, will be resolved in favor of numerals or figures.
30. Prior to the award of Contract, District reserves the right to consider the responsibility of the Bidder. District may conduct investigations as District deems necessary to assist in the evaluation of any bid and to establish the responsibility, including, without limitation, qualifications and financial ability of Bidders, proposed subcontractors, suppliers, and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to District's satisfaction within the prescribed time.

**END OF DOCUMENT**

**Last Date and Time questions can be received is**  
**Date: 08/15/2017 Time: 3:00 P.M.**

To: Marin Community College District 1800 Ignacio Blvd Novato, CA 94949	
<b>Attention: Paul Lum</b>	Email : plum@gilbaneco.com Cc: mramirez@marin.edu

**Bid Package #17/18 – MB2**  
**Athletic Facilities Improvement - #K11**

**Bid Question**

From : Company _____ Attention: _____	Date: _____	Re: _____
Reference Drawing No. _____	Reference Spec. Section _____	
Reference Detail(s) : _____	Reference Paragraph(s) : _____	
Question:		

**Answer:**

  
  
  
  
  
  
  
  
  
  

Answered By: _____	Date: _____
Firm: _____	

Question Included in Addendum No. _____ to Bid Package No. _____	By: _____ Date: _____
--	-----------------------

## DOCUMENT 00 31 19

**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 Marin Community College District ("District"), its consultants, contractors, and tenants. These documents may 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.
- 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) Original Construction Drawings.

**3. Use of Information**

- a. Information regarding existing conditions was obtained only for use of District and its consultants, contractors, and tenants for planning and design and is **not** part of the Contract Documents.
- b. District does not warrant, and makes no representation regarding, the accuracy or thoroughness of any information regarding existing conditions.

Bidder represents and agrees that in submitting a bid it is not relying on any information regarding existing conditions supplied by District.

- c. Under no circumstances shall District be deemed to warrant or represent existing above-ground conditions, as-built conditions, or other actual conditions, verifiable by independent investigation. These conditions are verifiable by Contractor by the performance of its own independent investigation that Contractor must perform as a condition to bidding and Contractor 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

DOCUMENT 00 31 32

**GEOTECHNICAL DATA**

**1. Summary**

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

**2. Geotechnical Reports**

- a. Geotechnical reports may have been prepared for and around the Site by soil investigation engineers hired by Marin Community College District ("District"), and its consultants, contractors, and tenants.
- b. Geotechnical reports may be inspected at the District offices or the Construction Manager's offices, if any, and copies may be obtained at cost of reproduction and handling upon Bidder's agreement to pay for such copies. These reports are **not** part of the Contract Documents.
- c. The reports and drawings of physical conditions that may relate to the Project are the following:

Athletic Fields Synthetic Turf Project  
College Of Marin Kentfield CA  
Dated: June 29, 2017  
On File at Fiscal Services, Building 8.

**3. Use of Data**

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

---

#### 4. Limited Reliance Permitted on Certain Information

- a. Reference is made herein for identification of:

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

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

- b. Bidder may rely upon the general accuracy of the "technical data" contained in the reports and drawings identified above, but only insofar as it relates to subsurface conditions, provided Bidder has conducted the independent investigation required pursuant to Instructions to Bidders, and discrepancies are not apparent. The term "technical data" in the referenced reports and drawings shall be limited as follows:
- (1) The term "technical data" shall include actual reported depths, reported quantities, reported soil types, reported soil conditions, and reported material, equipment or structures that were encountered during subsurface exploration. The term "technical data" does not include, and Bidder may not rely upon, any other data, interpretations, opinions or information shown or indicated in such drawings or reports that otherwise relate to subsurface conditions or described structures.
  - (2) The term "technical data" shall not include the location of underground facilities.
  - (3) Bidder may not rely on the completeness of reports and drawings for the purposes of bidding or construction. Bidder may rely upon the general accuracy of the "technical data" contained in such reports or drawings.
  - (4) Bidder is solely responsible for any interpretation or conclusion drawn from any "technical data" or any other data, interpretations, opinions, or information provided in the identified reports and drawings.

#### 5. Investigations/Site Examinations

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

determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of Contract Documents.

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

**END OF DOCUMENT**





The selection of Bid Alternates may occur prior to the Contract Date, or may, by the Agreement, be deferred for possible selection at a subsequent date.

Acceptance or Rejection: Acceptance or rejection of each Bid Alternate is at the discretion of the District. None, any or all Bid Alternates may be accepted or rejected in any sequence by the District.

Modifications to the work shall require furnishing and installing the selected Bid Alternate materials and labor to the satisfaction of the District’s Representative at no additional cost to the District other than described in the applicable Bid Alternate.

Extent of Bid Alternate: Bidders shall determine the full extent of work affected by each Bid Alternate and shall make full and proper allowance for such extent.

Each Bid Alternate price must include all labor, materials, equipment, facilities, transportation and services to complete all work related to the Bid Alternate.

No increase in Contract days or extension of Contract completion schedule shall be made for Work required by Bid Alternate improvements.

**Bid Alternates:**

**Alternate #1: Add Data Network Infrastructure – POC Data Vault**

Materials and labor to trench and install conduit, pullboxes and accessories for data network from (N) IDF to (E) data vault per Sheet E1.1.

\_\_\_\_\_ Dollars, \$\_\_\_\_\_

**Alternate #2: Add Data Network Infrastructure – POC Physical Education Building**

Materials and labor to trench and install conduit, pullboxes and accessories for data network from (N) IDF to (E) MDF in Physical Education Building per Sheet E1.1.

\_\_\_\_\_ Dollars, \$\_\_\_\_\_

**Alternate #3: Add Mobile Press Box – Soccer**

Procure, assemble and place one (1) mobile press box per Specifications 12 93 00, D; Donkey Ultimate Media Package with Storage.

\_\_\_\_\_ Dollars, \$\_\_\_\_\_

- 2. The undersigned has reviewed the Work outlined in the Contract Documents and fully understands the scope of Work required in this Proposal, understands the construction and project management function(s) is described in the Contract Documents, and that each Bidder who is awarded a contract shall be in fact a prime contractor, not a subcontractor, to the District, and agrees that its Proposal, if accepted by the District, will be the basis for the Bidder to enter into a contract with the District in accordance with the intent of the Contract Documents.

- 3. The undersigned has notified the District in writing of any discrepancies or omissions or of any doubt, questions, or ambiguities about the meaning of any of the Contract Documents, and has contacted the Construction Manager before bid date to verify the issuance of any clarifying Addenda.
- 4. The undersigned agrees to commence work under this Contract on the date established in the Contract Documents and to complete all work within the time specified in the Contract Documents.
- 5. The liquidated damages clause of the General Conditions and Agreement is hereby acknowledged.
- 6. It is understood that the District reserves the right to reject this bid and that the bid shall remain open to acceptance and is irrevocable for a period of ninety (90) days.
- 7. The following documents are attached hereto:
  - Bid Bond on the District's form or other security
  - Designated Subcontractors List
  - Site-Visit Certification
  - Non-Collusion Declaration

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 \_\_\_\_\_ license.
- 10. The undersigned 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 [and with all requirements of the Project Labor Agreement].
- 12. Bidder specifically acknowledges and understands that if it is awarded the Contract, that it and its subcontractors shall participate in and comply with the owner-controlled or wrap-up insurance program (OCIP).
- 13. The 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 aware that if a false claim is knowingly submitted (as the terms "claim" and "knowingly" are defined in the California False Claims Act, Cal. 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.
- 16. 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 \_\_\_\_\_ 2017.

Name of Bidder \_\_\_\_\_

Type of Organization \_\_\_\_\_

Signed by \_\_\_\_\_

Title of Signer \_\_\_\_\_

Address of Bidder \_\_\_\_\_

Taxpayer's 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.: \_\_\_\_\_

If Bidder is a corporation, affix corporate seal.

Name of Corporation: \_\_\_\_\_

President: \_\_\_\_\_

Secretary: \_\_\_\_\_

Treasurer: \_\_\_\_\_

Manager: \_\_\_\_\_

END OF DOCUMENT

DOCUMENT 00 43 13

**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 \_\_\_\_\_ 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 Marin Community College District ("District") of County, State of California as Obligee, 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;

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 \_\_\_\_\_, 2017.

(Affix Corporate Seal)

\_\_\_\_\_  
Principal

\_\_\_\_\_  
By

(Affix Corporate Seal)

\_\_\_\_\_  
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**

DOCUMENT 00 43 36

**DESIGNATED SUBCONTRACTORS LIST**  
(TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID)

PROJECT:           Athletic Facilities Improvement - #K11          

Bidder acknowledges and agrees that under Public Contract Code section 4100, et seq., 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 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 under Public Contract Code section 4100, et seq., 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 bids 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 Bid, including alternates.

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

**Subcontractor Name:** \_\_\_\_\_

CA Cont. Lic. #: \_\_\_\_\_ Location: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

**Subcontractor Name:** \_\_\_\_\_

CA Cont. Lic. #: \_\_\_\_\_ Location: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

**Subcontractor Name:** \_\_\_\_\_

CA Cont. Lic. #: \_\_\_\_\_ Location: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

**Subcontractor Name:** \_\_\_\_\_

CA Cont. Lic. #: \_\_\_\_\_ Location: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

**Subcontractor Name:** \_\_\_\_\_

CA Cont. Lic. #: \_\_\_\_\_ Location: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

**Subcontractor Name:** \_\_\_\_\_

CA Cont. Lic. #: \_\_\_\_\_ Location: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

**Subcontractor Name:** \_\_\_\_\_

CA Cont. Lic. #: \_\_\_\_\_ Location: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

**Subcontractor Name:** \_\_\_\_\_

CA Cont. Lic. #: \_\_\_\_\_ Location: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

**Subcontractor Name:** \_\_\_\_\_

CA Cont. Lic. #: \_\_\_\_\_ Location: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

**Subcontractor Name:** \_\_\_\_\_

CA Cont. Lic. #: \_\_\_\_\_ Location: \_\_\_\_\_

Portion of Work: \_\_\_\_\_

Date: \_\_\_\_\_

Proper Name of Bidder: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

END OF DOCUMENT



DOCUMENT 00 45 01

**SITE VISIT CERTIFICATION**

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

PROJECT:  Athletic Facilities Improvement - #K11

Check option that applies:

\_\_\_\_\_ I certify that I visited the Site of the proposed Work 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 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 Marin Community College School District, its Architect, its Engineer, its Construction Manager, and all of their respective officers, agents, employees, and consultants from any damage, or omissions, related to conditions that could have been identified during my visit and/or the Bidder's representative's visit to the Site.

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

Date: \_\_\_\_\_

Proper Name of Bidder: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

END OF DOCUMENT

DOCUMENT 00 45 19

**NON-COLLUSION DECLARATION**

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

The undersigned declares:

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

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

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on \_\_\_\_\_ (Date)

at \_\_\_\_\_, \_\_\_\_\_ (City) (State)

\_\_\_\_\_  
**(Signature)**

\_\_\_\_\_  
**(Address)**

\_\_\_\_\_  
**(Name Printed or Typed)**

\_\_\_\_\_  
**(City, State)**

\_\_\_\_\_  
**(Area Code and Telephone Number)**

END OF DOCUMENT

DOCUMENT 00 45 26

**WORKERS' COMPENSATION CERTIFICATION**

PROJECT/CONTRACT NO.:  Athletic Facilities Improvement - #K11  between Marin Community College District ("District") and \_\_\_\_\_ ("Contractor" or "Bidder") ("Contract" or "Project").

Labor Code section 3700, in relevant part, provides:

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

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

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

Date: \_\_\_\_\_

Proper Name of Contractor: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

(In accordance with Article 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

DOCUMENT 00 45 46.01

**PREVAILING WAGE AND  
RELATED LABOR REQUIREMENTS CERTIFICATION**

PROJECT/CONTRACT NO.:  Athletic Facilities Improvement - #K11  between Marin  
Community College District ("District") and \_\_\_\_\_  
\_\_\_\_\_ ("Contractor" or "Bidder") ("Contract" or "Project").

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

Date: \_\_\_\_\_

Proper Name of Contractor: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

END OF DOCUMENT

DOCUMENT 00 45 46.03

**DRUG-FREE WORKPLACE CERTIFICATION**

PROJECT/CONTRACT NO.: Athletic Facilities Improvement - #K11 between Marin Community College District ("District") and \_\_\_\_\_ ("Contractor" or "Bidder") ("Contract" or "Project").

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

The District is not a "state agency" as defined in the applicable section(s) of the Government Code, but the District is a local agency and public school district under California law and requires all contractors on District projects to comply with the provisions and requirements of Government Code section 8350 et seq., the Drug-Free Workplace Act of 1990.

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 Government Code section 8350 et seq. and hereby certify that I will adhere to the requirements of the Drug-Free Workplace Act of 1990.

Date: \_\_\_\_\_

Proper Name of Contractor: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

END OF DOCUMENT

DOCUMENT 00 45 46.04

**TOBACCO-FREE ENVIRONMENT CERTIFICATION**

PROJECT/CONTRACT NO.:  Athletic Facilities Improvement - #K11  between Marin Community College District ("District") and \_\_\_\_\_ ("Contractor" or "Bidder") ("Contract" or "Project").

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

Pursuant to, without limitation, 20 U.S.C section 6083, Labor Code section 6400 et seq., Health & Safety Code section 104350 et seq. 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.

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

DOCUMENT 00 45 46.05

**HAZARDOUS MATERIALS CERTIFICATION**

PROJECT/CONTRACT NO.:  Athletic Facilities Improvement - #K11  between Marin Community College District ("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 Hazardous Materials Procedures & Requirements, and shall comply with all the provisions outlined therein.

Date: \_\_\_\_\_

Proper Name of Contractor: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

END OF DOCUMENT



DOCUMENT 00 45 46.06

**LEAD-BASED MATERIALS CERTIFICATION**

PROJECT/CONTRACT NO.: Athletic Facilities Improvement - #K11 between Marin Community College District ("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 disburse 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 that regulation. The OSHA Regulations define construction work as work for construction, alteration, and/or repair, including painting and decorating. It includes, but is not limited to, the following:

- a. Demolition or salvage of structures where lead or materials containing lead are present;
- b. Removal or encapsulation of materials containing lead;
- c. New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead;
- d. Installation of products containing lead;
- e. Lead contamination/emergency cleanup;
- f. Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed; and
- g. 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

DOCUMENT 00 45 46.07

**IMPORTED MATERIALS CERTIFICATION**

PROJECT/CONTRACT NO.:  Athletic Facilities Improvement - #K11  between Marin Community College District ("District") and \_\_\_\_\_ ("Contractor" or "Bidder") ("Contract" or "Project").

This form shall be executed by all entities that, in any way, provide or deliver and/or supply any soils, aggregate, or related materials ("Fill") to the Project Site. All Fill shall satisfy all requirements of any environmental review of the Project performed pursuant to the statutes and guidelines of the California Environmental Quality Act, section 21000 et seq. of the Public Resources Code ("CEQA"), and all requirements of section 17210 et seq. of the Education Code, including requirements for a Phase I environmental assessment acceptable to the State of California Department of Education and Department of Toxic Substances Control.

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

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

Name of firm ("Firm"): \_\_\_\_\_

Mailing address: \_\_\_\_\_

Addresses of branch office used for this Project: \_\_\_\_\_

If subsidiary, name and address of parent company: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

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

Date: \_\_\_\_\_

Proper Name of Firm: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

END OF DOCUMENT

DOCUMENT 00 45 46.08

**SEX OFFENDER REGISTRATION ACT CERTIFICATION**

PROJECT/CONTRACT NO.:  Athletic Facilities Improvement - #K11  between the Marin Community College District ("District") and \_\_\_\_\_ ("Contractor" or "Bidder") ("Contract" or "Project").

This certification provides notice to the Contractor that:

- Penal Code section 290.01 requires every person required to register pursuant to sections 290 to 290.009, inclusive, of the Sex Offender Registration Act who is carrying on a vocation at the community college for more than fourteen (14) days, or for an aggregate period exceeding thirty (30) days in a calendar year, shall, in addition to the registration required by the Sex Offender Registration Act, register with the campus police department within five working days of commencing employment at that community college on a form as may be required by the Department of Justice. The terms "employed or carries on a vocation" include employment whether or not financially compensated, volunteered, or performed for government or educational benefit.
- If the community college has no campus police department, the registrant shall instead register with the police of the city in which the campus is located or the sheriff of the county in which the campus is located if the campus is located in an unincorporated area or in a city that has no police department, on a form as may be required by the Department of Justice.
- The registrant shall also notify the campus police department within five (5) working days of ceasing to be employed, or ceasing to carry on a vocation, at the community college.

Contractor hereby acknowledges, under penalty of perjury, that it is aware of the provisions of section 290.01 of the Penal Code, and it will provide notice of the above provisions to all of its employees, subcontractors, and employees of subcontractors regardless of whether they are designated as employees or acting as independent contractors of the Contractor at least five (5) working days before commencing the performance of the Work of this Contract.

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

DOCUMENT 00 45 90

**POST BID INTERVIEW****PART 1 – GENERAL****1.01 SUMMARY**

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

**1.02 REQUIRED ATTENDANCE**

- A. A duly authorized representative of the apparent low bidder is required to attend the Post Bid Interview, in person.
- B. The apparent low bidder's authorized representative must have signatory authority on behalf of the apparent low bidder.
- C. Failure to attend the Post Bid Interview will be considered just cause for the District to reject the Bid.

**1.03 POST BID INTERVIEW PROCEDURE**

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



- (12) Prevailing Wage Requirements
- (13) Liquidated Damages
- (14) Required Documentation for Contract Administration
- (15) Contract Coordination Requirements

**1.04 POST BID INTERVIEW DOCUMENTATION**

The Construction Manager will document the Post Bid Interview on the form attached to this Section. Both the Apparent Low Bidder and the Construction Manager are required to sign the Post Bid Interview Documentation.

**POST BID INTERVIEW**

**CONSTRUCTION MANAGER**

Paul Lum  
Gilbane Building Co  
1800 Ignacio Blvd Building 17  
Novato CA 94949  
Phone 408-314-5242

BIDDER: \_\_\_\_\_

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ PHONE # \_\_\_\_\_

I. INTRODUCTIONS:

A. Present	_____	_____
	CONTRACTOR	CONTRACTOR
	_____	_____
	[CM]	[CM]

II. PROPOSED CONTRACT: Athletic Facilities Improvement - #K11

III. PURPOSE OF INTERVIEW IS TO ASSURE:

A. Do you acknowledge submission of a complete and accurate bid?	Yes	No
B. Do you acknowledge the Bid Document submittal timelines after NOA and NTP and can you meet those timelines?	Yes	No
C. Do you acknowledge the requirements for the escrow of bid documents?	Yes	No

IV. CONTRACTUAL REQUIREMENTS:

A. Do you understand you are a prime contractor?	Yes	No
B. Can you meet specified insurance requirements?	Yes	No
1. Does any of your policies that require Additional Insured endorsements exceed the minimum coverage requirements?	Yes	No
2. Are you requesting that the District accept an Umbrella or Excess Liability Insurance Policy to meet the policy limit?	Yes	No
3. Will there be a gap between the per occurrence amount of any underlying policy and the start of the coverage under the Umbrella or Excess Liability Insurance Policy?	Yes	No

- C. Will you provide the Performance, and a Labor and Material Bond for 100% of the Contract Price as stipulated? Yes No
- 1. Cost for bond: \_\_\_\_\_%
- 2. Is the cost of your bond in your base bid? Yes No
- 3. Is your surety licensed is issue bonds in California? Yes No

V. SCOPE OF WORK:

- A. Acknowledged Receipt of Addenda #1-\_\_\_ Yes No
- B. Are the costs for addenda items included in your bid? (if applicable) Yes No
- C. Do you have a complete understanding of your Scope of Work under the proposed Agreement? Yes No
- D. You have re-reviewed the documents and understand the Scope of the Work. Are there any items that require clarification? Yes No

If yes, please identify them.

- 1. \_\_\_\_\_  
\_\_\_\_\_
- 2. \_\_\_\_\_  
\_\_\_\_\_
- 3. \_\_\_\_\_  
\_\_\_\_\_
- 4. \_\_\_\_\_  
\_\_\_\_\_
- 5. \_\_\_\_\_  
\_\_\_\_\_

Is (are) the cost(s) for above items? Yes No

- C. Review bid alternative (if applicable) #1-\_\_\_
- D. Are the plans and specifications clear and understandable to your satisfaction? Yes No

VI. SCHEDULE:

- A. Do you acknowledge and agree to the stipulated completion dates and milestones in the contract? Yes No
- 1. Will you provide a detailed construction schedule to \_\_\_\_\_ within the required ten (10) days, per the contract? Yes No
- 2. It is understood that the Project schedule is critical and that that weekend and overtime work may be required to meet the milestones. Yes No
- 3. It is understood that if rain does occur, then all dewatering and And protection of work is required, per the contract. Yes No

If not, what must change and why? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

B. Identify critical materials, deliveries, long lead items and other dependencies, including Owner Furnished items that could affect the completion of your work.

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_

VII. CONTRACTOR COMMENTS/SUGGESTIONS:

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_

VIII. CONTRACTOR

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

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

[Company Name]

\_\_\_\_\_  
Signature \_\_\_\_\_ Title: \_\_\_\_\_

Date: \_\_\_\_\_

IX. CONSTRUCTION MANAGER

Signature \_\_\_\_\_ Title: \_\_\_\_\_

Date: \_\_\_\_\_

Title of Document: POST BID INTERVIEW  
Number of Pages: \_\_\_\_\_  
Date of Document: \_\_\_\_\_

**END OF DOCUMENT**

DOCUMENT 00 51 00

**NOTICE OF AWARD**

Dated: \_\_\_\_\_, 2017

To: \_\_\_\_\_  
(Contractor)

To: \_\_\_\_\_  
(Address)

From: Governing Board ("Board") of Marin Community College District ("District" or "Owner")

PROJECT:  Athletic Facilities Improvement - #K11  ("Project" or "Contract").

Contractor has been awarded the referenced Contract on \_\_\_\_\_, 2017, by action of the District's Board.

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

Three (3) copies of each of the Contract Documents (except Drawings) accompany this Notice of Award. Three (3) sets of the Drawings will be delivered separately or otherwise made available. Additional copies are available at cost of reproduction.

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

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.

- a. Agreement: To be executed by successful Bidder. Submit four (4) copies, each bearing an original signature.
- b. Escrow of Bid Documentation: This must include all required documentation. See the document Escrow of 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. Drug-Free Workplace Certification.
- i. Tobacco-Free Environment Certification.
- j. Hazardous Materials Certification.
- k. Lead-Based Paint Certification.
- l. Imported Materials 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.

MARIN COMMUNITY COLLEGE SCHOOL DISTRICT

BY: \_\_\_\_\_

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

END OF DOCUMENT

DOCUMENT 00 53 00

**AGREEMENT**

THIS AGREEMENT IS MADE AND ENTERED INTO THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2017, by and between the Marin Community College District ("District") and \_\_\_\_\_ ("Contractor") ("Agreement").

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

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

PROJECT: Athletic Facilities Improvement - #K11

("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, 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 18 documents, which shall control over figured dimensions, which shall control over large-scale drawings, which shall control over small-scale drawings. 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 One Hundred One ( 101 ) consecutive calendar days ("Contract Time") from the date specified in the District's Notice to Proceed or by December 29, 2017, whichever comes first.



**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 Five Hundred dollars (\$ 500) per day as liquidated damages for each and every day's delay beyond the time herein prescribed in finishing 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. 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. This provision does not exclude the recovery of damages for delay by either party under other provisions in the Contract Documents.

**7. Loss Or Damage:** The District and its 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 whatever; and shall hold the District and its authorized representatives harmless from all liability of every kind and nature arising from accident, negligence, or any cause whatever.

**8. Insurance and Bonds:** Before commencing the Work, Contractor shall provide all required certificates of insurance, and payment and performance bonds as evidence thereof.

**Insurance and Bonds:** Contractor and all Subcontractors under the Contractor shall participate in and comply with the owner-controlled or wrap-up insurance program (OCIP). Before commencing the Work, Contractor shall provide all required certificates of insurance, except for those coverages provided by the OCIP as described in the OCIP Manual, and payment and performance bonds as evidence thereof.

9. **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.
10. **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 have authority to approve and/or stop 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. The Contractor shall be liable for any delay caused by its non-compliant Work.
11. **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 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.
12. **Classification of Contractor's License:** Contractor hereby acknowledges that it currently holds valid Type \_\_\_\_\_ Contractor's license(s) issued by the State of California, Contractor's State Licensing Board, in accordance with division 3, chapter 9, of the Business and Professions Code and in the classification called for in the Contract Documents.
13. **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 1771.4.
14. **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.
15. 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.
16. **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).

**17. 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.

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

**CONTRACTOR**

**DISTRICT**

\_\_\_\_\_

MARIN COMMUNITY COLLEGE DISTRICT

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

DOCUMENT 00 55 00

**NOTICE TO PROCEED**

Dated: \_\_\_\_\_, 2017

TO: \_\_\_\_\_  
("Contractor")

ADDRESS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PROJECT: Athletic Facilities Improvement - #K11

between the Marin Community College District and Contractor ("Contract").

You are notified that the Contract Time under the above Contract will commence to run on \_\_\_\_\_, 2017. 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 **December 29, 2017**.

You must submit the following documents by 5:00 p.m. of the **(TENTH (10<sup>th</sup>))** 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. A complete subcontractors list, including the name, address, telephone number, facsimile number, California State Contractors License number, classification, and monetary value of all Subcontracts.

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

MARIN COMMUNITY COLLEGE DISTRICT

BY: \_\_\_\_\_

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

END OF DOCUMENT

DOCUMENT 00 56 00

**ESCROW BID DOCUMENTATION**

**1. Requirement to Escrow Bid Documentation**

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

**2. Ownership of Escrow Bid Documentation**

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

contemplated techniques of construction. Subject to the provisions herein, District agrees to safeguard the Escrow Bid Documentation, and all information contained therein, against disclosure to the fullest extent permitted by law.

### **3. Format and Contents of Escrow Bid Documentation**

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

### **4. Submittal of Escrow Bid Documentation**

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

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

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

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

Contractor and that subcontractor. If that subcontractor fails to designate a representative or appear for joint examination on **SEVEN (7)** calendar days notice, then the District representative and/or the Contractor may examine the Escrow Bid Documentation without that subcontractor present upon an additional **THREE (3)** calendar days notice if a representative of that subcontractor does not appear at the time set.

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

END OF DOCUMENT



DOCUMENT 00 57 00

**ESCROW AGREEMENT IN LIEU OF RETENTION**  
**Public Contract Code Section 22300**

**(Note: Contractor must use this form.)**

This Escrow Agreement ("Escrow Agreement") is made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2017, by and between the Marin Community College District ("District"), whose address is 1800 Ignacio Blvd., Novato, California, 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 Athletic Facilities Improvement - #K11 Project, in the amount of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) dated, \_\_\_\_\_, 2017, (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 terms of Contract between District and Contractor.

Securities shall be held in name of Marin Community College Community College 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 retention 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.
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.
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:

On behalf of Contractor:

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

\_\_\_\_\_  
Name

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Address

\_\_\_\_\_  
Address

On behalf of Escrow Agent:

\_\_\_\_\_  
Title

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Address

At the time of Escrow Account is opened, District and Contractor shall deliver to Escrow Agent a fully executed 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:

On behalf of Contractor:

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

\_\_\_\_\_  
Name

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Address

\_\_\_\_\_  
Address

END OF DOCUMENT

DOCUMENT 00 61 13.13

**PERFORMANCE BOND**  
**(100% of Contract Price)**

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

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the governing board ("Board") of the Marin Community College District, ("District") and \_\_\_\_\_ ("Principal") have entered into a contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to perform the following project:

Athletic Facilities Improvement - #K11 (Project Name/Project Number)

("Project" or "Contract") which Contract dated \_\_\_\_\_, 2017, 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:

- 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.

The condition of the obligation is such that, if the above bounden Principal, his or its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and agreements in the Contract and any alteration thereof made as therein provided, on his or 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, and it 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 \_\_\_\_\_, 2017.

(Affix Corporate Seal)

\_\_\_\_\_  
Principal

\_\_\_\_\_  
By

\_\_\_\_\_  
Surety

\_\_\_\_\_  
By

\_\_\_\_\_  
Name of California Agent of Surety

\_\_\_\_\_  
Address of California Agent of Surety

\_\_\_\_\_  
Telephone No. of California Agent of Surety

**Bidder 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

DOCUMENT 00 61 13.16

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

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

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the governing board ("Board") of the Marin Community College District, (or "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:

Athletic Facilities Improvement - #K11 (Project Name/Project Number)

("Project" or "Contract") which Contract dated \_\_\_\_\_, 2017, 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 his or its subcontractors, of the heirs, executors, administrators, successors, or assigns of any, all, or either of them shall fail to pay for any labor, materials, provisions, provender, 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 \_\_\_\_\_, 2017.

(Affix Corporate Seal)

\_\_\_\_\_  
Principal

\_\_\_\_\_  
By

\_\_\_\_\_  
Surety

\_\_\_\_\_  
By

\_\_\_\_\_  
Name of California Agent of Surety

\_\_\_\_\_  
Address of California Agent of Surety

\_\_\_\_\_  
Telephone No. of California Agent of Surety

**Bidder 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

DOCUMENT 00 65 19.26

**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 \_\_\_\_\_, 2017 by and between the MARIN COMMUNITY COLLEGE DISTRICT ("District") and \_\_\_\_\_ ("Contractor"), whose place of business is \_\_\_\_\_.

RECITALS:

- 1. District and Contractor entered into PROJECT/CONTRACT NO.: Athletic Facilities Improvement - #K11 ("Contract" or "Project") in the County of Marin, California.
- 2. The Work under the Contract has been completed.

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

AGREEMENT

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

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

- 4. 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.
- 5. 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 6 and continuing obligations described in Paragraph 8. 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, all its respective agents, employees, inspectors, assignees and transferees except for the Disputed Claim is set forth in Paragraph 6 and continuing obligations described in Paragraph 8 hereof.



6. 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.]

7. Consistent with California Public Contract Code section 7100, Contractor hereby agrees that, in consideration of the payment set forth in Paragraph 4 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.

8. Guarantees and warranties for the Work, and any other continuing obligation of Contractor, shall remain in full force and effect as specified in the Contract Documents.

9. To the furthest extent permitted by California law, Contractor shall defend, indemnify, and hold harmless the District, its agents, representatives, officers, consultants, employees, trustees, and volunteers (the "indemnified parties") from any and all losses, liabilities, claims, suits, and actions of any kind, nature, and description, including, but not limited to, attorneys' fees and costs, directly or indirectly arising out of, connected with, or resulting from the performance of the Contract unless caused wholly by the sole negligence or willful misconduct of the indemnified parties.

10. Contractor hereby waives the provisions of California Civil Code section 1542 which provides as follows:

A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM OR HER MUST HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR.

11. 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.

12. 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 \* \* \*

MARIN COMMUNITY COLLEGE DISTRICT

SIGNATURE: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

END OF DOCUMENT

DOCUMENT 00 65 36

**GUARANTEE FORM**

\_\_\_\_\_ ("Contractor") hereby agrees that the improvements to soccer/lacrosse field, tennis, volleyball, futsal and P.E. courtyards ("Work" of Contractor) which Contractor installed for the Marin Community College District ("District") for the following project:

PROJECT: Athletic Facilities Improvement - #K11

("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 \_\_\_\_\_ 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 \_\_\_\_\_, 2017.

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.: \_\_\_\_\_

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, heat, or cold conditions in excess of the norm for the location and time of year it occurred, (2) unanticipated, and (3) at the Project.

**1.1.2. Approval, Approved, and/or Accepted:** Refer to written authorization, unless stated otherwise.

**1.1.3. Architect:** 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.

**1.1.4. As-Built Drawings:** Unless otherwise defined in the Special Conditions, 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.

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

**1.1.6. 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.

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

**1.1.8. Construction Change Document:** A written order prepared and issued by the Architect and signed by the Division of State Architect (DSA) and the Architect, to address changes for accessibility, fire/life safety and structural Work. The Construction Change Document contains a complete description of the change in the Work.

**1.1.9. 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.

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

**1.1.11. 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:

- 1.1.11.1.** Notice to Bidders
- 1.1.11.2.** Instructions to Bidders
- 1.1.11.3.** Bid Form and Proposal
- 1.1.11.4.** Bid Bond
- 1.1.11.5.** Designated Subcontractors List
- 1.1.11.6.** Site-Visit Certification (if a site visit was required)
- 1.1.11.7.** Noncollusion Declaration
- 1.1.11.8.** Notice of Award
- 1.1.11.9.** Notice to Proceed
- 1.1.11.10.** Agreement
- 1.1.11.11.** Escrow of Bid Documentation
- 1.1.11.12.** Escrow Agreement for Security Deposits in Lieu of Retention
- 1.1.11.13.** Performance Bond
- 1.1.11.14.** Payment Bond (Contractor's Labor & Material Bond)
- 1.1.11.15.** General Conditions
- 1.1.11.16.** Special Conditions (if applicable)
- 1.1.11.17.** Labor Compliance Program Information and Forms (if applicable)
- 1.1.11.18.** Hazardous Materials Procedures and Requirements
- 1.1.11.19.** Workers' Compensation Certification
- 1.1.11.20.** Prevailing Wage Certification
- 1.1.11.21.** Disabled Veterans Business Enterprise Participation Certification (if applicable)
- 1.1.11.22.** Drug-Free Workplace Certification
- 1.1.11.23.** Tobacco-Free Environment Certification
- 1.1.11.24.** Hazardous Materials Certification
- 1.1.11.25.** Lead-Based Paint Certification
- 1.1.11.26.** Imported Materials Certification
- 1.1.11.27.** Criminal Background Investigation/Fingerprinting Certification
- 1.1.11.28.** Buy American Certification (if applicable)
- 1.1.11.29.** Roofing Project Certification (if applicable)
- 1.1.11.30.** Iran Contracting Act Certification (if applicable)
- 1.1.11.31.** All Plans, Technical Specifications, and Drawings
- 1.1.11.32.** Any and all addenda to any of the above documents
- 1.1.11.33.** Any and all change orders or written modifications to the above documents if approved in writing by the District

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

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

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

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

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

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

**1.1.18. Dispute:** A separate demand by Contractor for a time extension; 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.

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

**1.1.19.1.** 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

**1.1.19.2.** 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.

**1.1.20. 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.

**1.1.21. DSA:** Division of the State Architect.

**1.1.22. Field Work Directive:** A Field Work Directive is issued by the Program Manager to instruct the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. The Field Work Directive contains a complete description of the change in the Work. It also designates the method to be followed to determine changes in the Contract Sum or Contract Time.

**1.1.23. 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 prices for a specific portion of work and whereby the Contractor performs the work as indicated herein on a time and materials basis.

**1.1.24. 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.

**1.1.25. 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.

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

**1.1.27. 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.

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

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

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

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

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

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

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

**1.1.35. Record Drawings:** Unless otherwise defined in the Special Conditions, 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.

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

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

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

**1.1.39. 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.

**1.1.40. 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.

**1.1.41. 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.

**1.1.42. Site:** The Project site as shown on the Drawings.

**1.1.43. Specifications:** That portion of the Contract Documents, Division 1 through Division 17, 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.

**1.1.44. State:** The State of California.

**1.1.45. 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.

**1.1.46. 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.

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

**1.1.48. 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.

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

**1.2. Laws Concerning The Contract**

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

**1.3. No Oral Agreements**

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

**1.4. No Assignment**

Contractor shall not assign this Contract or any part thereof including, without limitation, any services 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 be come 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 on (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.

**1.6. 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 within the Contract Time.

**1.8.2.** Unless otherwise specified, all materials shall be new and the best of their respective kinds and grades as noted or specified, and workmanship shall be of good quality.

**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 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 approved, 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 demand from District, present documentary evidence showing that orders have been placed.

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

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

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

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

**1.8.8.** Nothing contained in this Article, however, shall defeat or impair the rights of persons furnishing materials or labor under any bond given by Contractor for their protection or any rights under any law permitting such protection or any rights under any law permitting such persons to look to funds due Contractor in hands of District (e.g., stop payment notices), and this provision shall be inserted in all subcontracts and material contracts and notice of its provisions shall be given to all persons furnishing material for work when no formal contract is entered into for such material.

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

**2. [RESERVED]**

**3. ARCHITECT**

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

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

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

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

**4. CONSTRUCTION MANAGER**

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

**4.2.** The Construction Manager, however, will have authority to reject materials and/or workmanship not conforming to the Contract Documents, as determined by the District, the Architect, and/or the Project Inspector. The Construction Manager shall also have the authority to require special inspection or testing of any portion of the

Work, whether it has been fabricated, installed, or fully completed. Any decision made by the Construction Manager, in good faith, shall not give rise to any duty or responsibility of the Construction Manager to the Contractor, any Subcontractor, their agents, employees, or other persons performing any of the Work. The Construction Manager shall have free access to any or all parts of Work at any time.

**4.3.** If the District does not use a Construction Manager on this Project, all references 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) 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 stop 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, 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, 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 and pay testing laboratory costs for all tests and inspections. Costs of tests of any materials found to be not in compliance with the Contract Documents shall be paid for by the District and reimbursed by the Contractor or deducted from the Contract Price.

**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 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, fees, licenses, facilities, transportation, taxes, and services necessary for the proper execution and completion of the Work, except as indicated herein.

**6.1. Status of Contractor**

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

**6.1.2.** As required by law, Contractor and all Subcontractors shall be properly licensed and regulated by the Contractor's 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=displayPWCRegistrationForm> or current URL.

**6.2. Project Inspection Card(s)**

Contractor shall verify that forms DSA 152 (or current version) 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, a 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, unless the Contractor's project manager and/or construction superintendent proves to be unsatisfactory to Contractor, District, any of the District's employees, agents, the Construction Manager, or the Architect, in which case, Contractor shall notify District in writing. 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.** If Contractor intends to make any change in the name or legal nature of the Contractor's entity, Contractor must first notify the District. The District shall determine if Contractor's intended change is permissible while performing this Contract.

**6.5. Field Office**

**6.5.1.** Contractor shall provide a temporary office on the Work 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 Work 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,
- 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.** All 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**

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, 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 to detect errors, omissions or inconsistencies in the Contract Documents or to ascertain compliance with applicable laws, building codes 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 cost caused by defective or ill-timed Work shall be borne by Contractor, inclusive of repair work.

**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 current version) 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 Registration**

Contractor shall secure and pay for all permits, licenses, registrations 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 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, 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, and certificates shall be delivered to District before demand is made for final payment.

**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 will 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.** Uniform 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.

**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.

**6.14. Safety/Protection of Persons and Property**

**6.14.1.** The Contractor will be solely and completely responsible for conditions of the Work 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 Work 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 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 therefor. 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 or behavior will be permitted. District may require Contractor to 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 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 Inspector charges necessitated by the Contractor's 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 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 free from debris such as waste, rubbish, and excess materials and equipment caused by the Work. Contractor shall not leave debris under, in, or about the Premises, 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 the continuing

education process. 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 will 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, or District may withhold those amounts from payment(s) to Contractor.

## **7. SUBCONTRACTORS**

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

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

**7.3.** Contractor agrees to bind every Subcontractor by terms of this Contract as far as those terms 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, as it is for acts and omissions of persons directly employed by Contractor. The divisions or sections of the Specifications are not intended to control the Contractor in dividing the Work among Subcontractors or limit the work performed by any trade.

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

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

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

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

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

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

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

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

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

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

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

**8. OTHER CONTRACTS/CONTRACTORS**

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

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

**8.3.** If any part of Contractor's Work depends for proper execution or results upon work of District or any other contractor, the Contractor shall inspect and promptly report to the District in writing before proceeding with its Work 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.

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

**8.5.** Contractor shall ascertain to its own satisfaction the scope of the Project and nature of District's or any other contracts that have been or may be awarded by District in prosecution of the Project to the end that Contractor may perform this Contract in light of the other contracts, if any.

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

**9. DRAWINGS AND SPECIFICATIONS**

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

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

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

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

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

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



Specifications. In case of ambiguity, conflict, or lack of information, District will furnish clarifications with reasonable promptness.

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

**9.8. 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.

**10.1.1.2. 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 acceptance.

**10.1.1.2.2.** 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%.

**10.1.1.2.4.** Closeout documentation shall have a value in the preliminary schedule of not less than 5%.

**10.1.1.2.5.** 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.

**10.1.1.2.6.** 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. 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.

**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 Industrial Safety ("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 Subcontractor List. The name, address, telephone number, facsimile number, California State Contractors License number, classification, and monetary value of all Subcontracts 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 submittals and 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. 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.

**10.3. Material Safety Data Sheets (MSDS)**

Contractor is required to ensure Material Safety Data Sheets are available in a readily accessible place at the Work 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 substance 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.

**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 is available, that report shall be available to the Contractor but shall not be a part of this Contract. 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.

**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 pot holing 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 reasonable margin and shall not relieve Contractor of responsibilities to exercise reasonable care 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. 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 CAL OSHA 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 in 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 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, and Any Auto including owned, non-owned, and hired, 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.** 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 if Contractor's underlying policy limits are less than required.

**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 Umbrella or 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.

**13.1.3. 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, fire, war, terrorism, lightning, smoke, and rioting. Coverage shall include debris removal, demolition, increased costs due to enforcement of all applicable ordinances and/or laws in the repair and replacement of damaged and undamaged portions of the property, and reasonable costs for the Architect's and engineering services and expenses required as a result of any insured loss upon the Work and Project, including completed Work and Work in progress, to the full insurable value thereof.

**13.1.6. Pollution Liability Insurance**

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

**13.1.6.2.** Contractor shall warrant that any retroactive date applicable to coverage under the policy predates 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, are included within the above policies and at the required limits, to cover its automobile exposure from transporting the pollutants from the site to an approved disposal site. This coverage shall include the Motor Carrier Act Endorsement, MCS 90.

**13.1.7. Proof of Carriage 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:

“This policy shall not be amended, canceled or modified and the coverage amounts shall not be reduced until notice has been mailed to District, Architect, and Construction Manager stating date of amendment, modification, cancellation or reduction. Date of amendment, modification, cancellation or reduction 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.

**13.1.7.3.** 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.

**13.1.7.4.** Insurance written on a “claims made” basis 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.** 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).

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

**13.1.7.7.** 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.**

**13.1.7.8.** 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.

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

### **13.1.8. Insurance Policy Limits**

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

<b>Commercial General Liability</b>	Product Liability and Completed Operations, Fire Damage Liability – Split Limit	<b>\$2,000,000 per occurrence; \$4,000,000 aggregate</b>
<b>Automobile Liability – Any Auto</b>	Combined Single Limit	\$1,000,000
<b>Workers Compensation</b>		Statutory limits pursuant to State law
<b>Employers' Liability</b>		\$1,000,000
<b>Builder's Risk (Course of Construction)</b>		Issued for the value and scope of Work indicated herein.
<b>Pollution Liability</b>		\$1,000,000 per claim; \$2,000,000 aggregate

### **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:

**14.1.2.1.** The date of completion as defined in Public Contract Code section 7107, subdivision (c), or

**14.1.2.2.** The commissioning date for the Project, if any.

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 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 operations of District, 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**

**14.2.1.** To the furthest extent permitted by California law, the Contractor shall indemnify, defend with legal counsel reasonably acceptable to the District, keep and hold harmless the District, the Architect, and the Construction Manager, their consultants and separate contractors, and their respective board members, officers, representatives, contractors, agents, and employees, in both individual and official capacities ("Indemnitees"), against all suits, claims, damages, losses, and expenses, including but not limited to attorney's fees, caused by, arising out of, resulting from, or incidental to, the performance of the Work under this Contract by the Contractor, its Subcontractors, vendors, or suppliers, except to the extent caused by the sole negligence, active negligence, or willful misconduct of the Indemnitees, and/or to any extent that would render these provisions void or unenforceable. This agreement and obligation of the Contractor shall not be construed to negate, abridge, or otherwise reduce any right or obligation of indemnity that would otherwise exist as to any party or person described herein. This indemnification, defense, and hold harmless obligation includes 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 stop payment notice actions or liens, including Civil Wage and Penalty Assessments and/or Orders by the California Department of Industrial Relations.

**14.2.2.** The Contractor shall give prompt notice to the District in the event of any injury (including death), loss, or damage included herein. Without limitation of the provisions herein, if the Contractor's agreement to indemnify, defend, and hold harmless the 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 full extent permitted by law.

**14.2.3.** 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.

**14.2.4.** The District may retain so much of the moneys due the Contractor as shall be considered necessary, until disposition of any such suit, claims or actions for damages or until the District, Architect and Construction Manager have received written agreement from the Contractor that they will unconditionally defend the District, Architect and Construction Manager, their officers, agents and employees, and pay any damages due by reason of settlement or judgment.

**14.2.5.** The defense and indemnification obligations hereunder shall survive the completion of Work, including the warranty/guarantee period, and/or the termination of the Agreement.

**15. TIME**

**15.1. Notice to Proceed**

**15.1.1.** District may issue a Notice to Proceed within three (3) months 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 this 3-month period, 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 and only if all of the following conditions are met:

**15.2.1.1.** The weather conditions constitute Adverse Weather, as defined herein and further specified in the Special Conditions;

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

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

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

**15.2.1.5.** The number of days of delay for the month exceeds those indicated in the Special Conditions.

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

**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 forces 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.

**15.4. 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 Work which are not the fault of Contractor or its Subcontractors, including acts of God as defined in Public Contract Code section 7105, acts of enemy, epidemics, and quarantine restrictions. Contractor shall, within five (5) calendar days of beginning of any delay, notify District in writing of causes of delay including documentation and facts explaining the delay. 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. (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; and

**16.3.2.4.** Contractor complies with the claims procedure of the Contract Documents.

**16.4. Float or Slack in the Schedule**

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

**17. CHANGES IN THE WORK**

**17.1. No Changes Without Authorization**

**17.1.1.** There shall be no change whatsoever in the Drawings, Specifications, or in the Work without an executed Change Order or a written Field Work 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 Field Work Directive. 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 in writing in the Change Order or Field Work 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 Field Work 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, the cost of that Change Order shall be agreed to, in writing, in advance by Contractor and District and 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 Field Work Directive, Contractor waives any claim of additional compensation or time for that additional work.

**17.1.4.** 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, or by Architect's response(s) to RFI(s) ) by Architect's Supplemental Instructions ("ASI").

## **17.3. Change Orders**

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

**17.3.1.1.** A description of a change in the Work;

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

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

## **17.4. Construction Change Directives**

**17.4.1.** A Construction Change Directive is a written order prepared and issued by the Architect and signed by the Division of State Architect and the Architect, directing a change in the Work. The District may as provided by law, by Field Work

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 Field Work 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 Field Work 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.

**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 on a form supplied by the District 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 ("PR") 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 pursuant to the revisions herein 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. If Contractor fails to request a time extension in a PCO, then the Contractor is thereafter precluded from requesting time and/or claiming a delay. In no case shall Contractor or any of its Subcontractors be permitted to reserve rights for additional time for Change Order Work.

### **17.7.4. Unknown and/or Unforeseen Conditions**

If Contractor submits a PCO requesting an increase in Contract Price and/or Contract Time that is based at least partially on Contractor's assertion that Contractor has encountered unknown and/or unforeseen condition(s) on the Project, then Contractor shall base the PCO on provable information that, beyond a reasonable doubt and to the District's satisfaction, demonstrates that the unknown and/or unforeseen condition(s) were actually unknown and/or unforeseen and that the condition(s) were reasonably unknown and/or unforeseen. If not, the District shall deny the PCO and the Contractor shall complete the Project without any increase in Contract Price and/or Contract Time based on that PCO.

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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.

	<b><u>WORK PERFORMED OTHER THAN BY CONTRACTOR</u></b>	<b><u>ADD</u></b>	<b><u>DEDUCT</u></b>
(a)	<b>Material</b> (attach itemized quantity and unit cost plus sales tax)		
(b)	<b>Add Labor</b> (attach itemized hours and rates, fully encumbered)		
(c)	<b>Add Equipment</b> (attach suppliers’ invoice)		
(d)	<b>Subtotal</b>		
(e)	<b>Add overhead and profit for any and all tiers of Subcontractor</b> , the total not to exceed ten percent (10%) of Item (d)		
(f)	<b>Subtotal</b>		
(g)	<b>Add overhead and profit for Contractor</b> , not to exceed five percent (5%) of Item (f)		
(h)	<b>Subtotal</b>		
(i)	<b>Add Bond and Insurance</b> , not to exceed one and a half percent (1.5%) of Item (h)		
(j)	<b>TOTAL</b>		
(k)	<b>Time</b> (zero unless indicated)		<u>      </u> Calendar Days

	<b><u>WORK PERFORMED BY CONTRACTOR</u></b>	<b><u>ADD</u></b>	<b><u>DEDUCT</u></b>
(a)	<b>Material</b> (attach itemized quantity and unit cost plus sales tax)		
(b)	<b>Add Labor</b> (attach itemized hours and rates, fully encumbered)		
(c)	<b>Add Equipment</b> (attach suppliers’ invoice)		
(d)	<b>Subtotal</b>		
(e)	<b>Add overhead and profit for Contractor</b> , not to exceed fifteen percent (15%) of Item (d)		
(f)	<b>Subtotal</b>		
(g)	<b>Add Bond and Insurance</b> , not to exceed one and a half percent (1.5%) of Item (f)		
(h)	<b>TOTAL</b>		
(i)	<b>Time</b> (zero unless indicated)		<u>      </u> Calendar Days

	<b><u>WORK PERFORMED OTHER THAN BY CONTRACTOR</u></b>	<b><u>ADD</u></b>	<b><u>DEDUCT</u></b>
(a)	<b>Material</b> (attach itemized quantity and unit cost plus sales tax)		

(b)	<b>Add Labor</b> (attach itemized hours and rates, fully encumbered)		
(c)	<b>Add Equipment</b> (attach suppliers' invoice)		
(d)	<b>Subtotal</b>		
(e)	<b>Add overhead and profit for any and all tiers of Subcontractor</b> , the total not to exceed ten percent (10%) of Item (d)		
(f)	<b>Subtotal</b>		
(g)	<b>Add overhead and profit for Contractor</b> , not to exceed five percent (5%) of Item (f)		
(h)	<b>Subtotal</b>		
(i)	<b>Add Bond and Insurance</b> , not to exceed one and a half percent (1.5%) of Item (h)		
(j)	<b>TOTAL</b>		
(k)	<b>Time</b> (zero unless indicated)		<u>      </u> <b>Calendar Days</b>

	<b>WORK PERFORMED BY CONTRACTOR</b>	<b>ADD</b>	<b>DEDUCT</b>
(a)	<b>Material</b> (attach itemized quantity and unit cost plus sales tax)		
(b)	<b>Add Labor</b> (attach itemized hours and rates, fully encumbered)		
(c)	<b>Add Equipment</b> (attach suppliers' invoice)		
(d)	<b>Subtotal</b>		
(e)	<b>Add overhead and profit for Contractor</b> , not to exceed fifteen percent (15%) of Item (d)		
(f)	<b>Subtotal</b>		
(g)	<b>Add Bond and Insurance</b> , not to exceed one and a half percent (1.5%) of Item (f)		
(h)	<b>TOTAL</b>		
(i)	<b>Time</b> (zero unless indicated)		<u>      </u> <b>Calendar Days</b>

**17.8.2. Labor.** Contractor shall be compensated for the costs of labor actually and directly utilized in the performance of the Work. Such labor costs shall be limited to field labor for which there is a prevailing wage rate classification. Wage rates for labor shall not exceed the prevailing wage rates in the locality of the Site and shall be in the labor classification(s) necessary for the performance of the Work. 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.



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

**17.8.4. Equipment.** As a precondition for the District's duty to pay for Equipment rental or loading and transportation, Contractor shall provide satisfactory evidence of the actual costs of Equipment from the supplier, vendor or rental agency of same. Contractor shall be compensated for the actual cost of the necessary and direct use of Equipment in the performance of the change in the Work. Use of such Equipment in the performance of the change in the Work shall be compensated in increments of fifteen (15) minutes. Rental time for Equipment moved by its own power shall include time required to move such Equipment to the site of the Work from the nearest available rental source of the same. If Equipment is not moved to the Site by its own power, Contractor will be compensated for the loading and transportation costs in lieu of rental time. The foregoing notwithstanding, neither moving time or loading and transportation time shall be allowed if the Equipment is used for performance of any portion of the Work other than the change in the Work. Unless prior approval in writing is obtained by the Contractor from the Architect, the Project Inspector and the District, no costs or compensation shall be allowed for time while Construction Equipment is inoperative, idle or on standby, for any reason. Contractor shall not be entitled to an allowance or any other compensation for Equipment or tools used in the performance of change in the Work where such Equipment or tools have a replacement value of **\$500.00** or less. Equipment costs claimed by the Contractor in connection with the performance of any Work shall not exceed rental rates established by distributors or construction equipment rental agencies in the locality of the Site; any costs asserted which exceed such rental rates shall not be allowed or paid. Unless otherwise specifically approved in writing by the Architect, the Project Inspector and the District, the allowable rate for the use of Equipment in connection with the Work shall constitute full compensation to the Contractor for the cost of rental, fuel, power, oil, lubrication, supplies, necessary attachments, repairs or maintenance of any kind, depreciation, storage, insurance, labor (exclusive of labor costs of the Equipment operator), and any and all other costs incurred by the Contractor incidental to the use of such Equipment.

**17.9. Change Order Certification**

**17.9.1.** All Change Orders and PCOs must include the following certification by the Contractor:

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

**17.9.1.2.** It is expressly understood that the value of the extra Work or changes expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project. Any costs, expenses, damages, or time extensions not included are deemed waived.

**17.10. Determination of Change Order Cost**

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

**17.10.1.1.** District acceptance of a PCO;

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

**17.10.1.3.** By agreement between District and Contractor.

**17.11. Deductive Change Orders**

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

**17.12. Addition or Deletion of Alternate Bid Item(s)**

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

**17.13. Discounts, Rebates, and Refunds**

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

**17.14. Accounting Records**

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

**17.15. Notice Required**

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

**17.16. Applicability to Subcontractors**

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

**17.17. Alteration to Change Order Language**

Contractor shall not alter Change Orders or reserve time in Change Orders. Contractor shall execute finalized Change Orders and proceed under the provisions herein with proper notice.

**17.18. Failure of Contractor to Execute Change Order**

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

**18. REQUEST FOR INFORMATION**

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

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

**19. PAYMENTS**

**19.1. Contract Price**

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

**19.2. Applications for Progress Payments**

**19.2.1. Procedure for Applications for Progress Payments**

**19.2.1.1. Application for Progress Payment**

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

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

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

The Contractor warrants title to all Work performed as of the date of this payment application has been completed in accordance with the Contract Documents for the Project. The Contractor further warrants that all amounts have been paid for work which previous Certificates for Payment were issued and payments received and all Work performed as of the date of this payment application is free and clear of liens, claims, security interests, or encumbrances in favor of the

Contractor, Subcontractors, material and equipment suppliers, workers, or other persons or entities making a claim by reason of having provided labor, materials, and equipment relating to the Work, except those of which the District has been informed.

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

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

**19.2.1.1.1.16.1** Contractor and/or its Subcontractor(s) provide electronic CPRs weekly for all weeks any journeyman, apprentice, worker or other employee was employed in connection with the Work directly to the DIR, or within ten (10) days of any request by the District or the DIR, and

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

**19.2.2.** Prerequisites for Progress Payments

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

- 19.2.2.1.1.** Installation of the Project sign;
- 19.2.2.1.2.** Installation of field office;
- 19.2.2.1.3.** Installation of temporary facilities and fencing;
- 19.2.2.1.4.** Schedule of Values;
- 19.2.2.1.5.** Contractor's Construction Schedule;
- 19.2.2.1.6.** Schedule of unit prices, if applicable;
- 19.2.2.1.7.** Submittal Schedule;
- 19.2.2.1.8.** Receipt by Architect of all submittals due as of the date of the payment application;
- 19.2.2.1.9.** Copies of necessary permits;
- 19.2.2.1.10.** Copies of authorizations and licenses from governing authorities;

**19.2.2.1.11.** Initial progress report;

**19.2.2.1.12.** Surveyor qualifications;

**19.2.2.1.13.** Written acceptance of District's survey of rough grading, if applicable;

**19.2.2.1.14.** List of all Subcontractors, with names, license numbers, telephone numbers, and Scope of Work;

**19.2.2.1.15.** All bonds and insurance endorsements; and

**19.2.2.1.16.** Resumes of Contractor's project manager, and if applicable, job site secretary, record documents recorder, and job site superintendent.

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

**19.2.2.3.** No Waiver of Criteria Any payments made to Contractor where criteria set forth herein have not been met shall not constitute a waiver of said criteria by District. Instead, such payment shall be construed as a good faith effort by District to resolve differences so Contractor may pay its Subcontractors and suppliers. Contractor agrees that failure to submit such items may constitute a breach of contract by Contractor and may subject Contractor to termination.

### **19.3. Progress Payments**

#### **19.3.1. District's Approval of Application for Payment**

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

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

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

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

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

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

**19.3.1.2.2.** Results of subsequent tests and inspections,

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

**19.3.1.2.4.** Specific qualifications expressed by the Architect.

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

**19.3.2.** Payments to Contractor

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

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

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



**19.3.3. No Waiver**

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

**19.4. Decisions to Withhold Payment****19.4.1. Reasons to Withhold Payment**

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

- 19.4.1.1.** Defective Work not remedied within **FORTY-EIGHT (48)** hours of written notice to Contractor.
- 19.4.1.2.** Stop Payment Notices or other liens served upon the District as a result of the Contract. Contractor agrees that the District may withhold up to 125% of the amount claimed in the Stop Payment Notice to answer the claim and to provide for the District's reasonable cost of any litigation pursuant to the stop payment notice.
- 19.4.1.3.** Liquidated damages assessed against the Contractor.
- 19.4.1.4.** The cost of completion of the Contract if there exists reasonable doubt that the Work can be completed for the unpaid balance of the Contract Price or by the completion date.
- 19.4.1.5.** Damage to the District or other contractor(s).
- 19.4.1.6.** Unsatisfactory prosecution of the Work by the Contractor.
- 19.4.1.7.** Failure to store and properly secure materials.
- 19.4.1.8.** Failure of the Contractor to submit, on a timely basis, proper, sufficient, and acceptable documentation required by the Contract Documents, including, without limitation, a Construction Schedule, Schedule of Submittals, Schedule of Values, Monthly Progress Schedules, Shop Drawings, Product Data and samples, Proposed product lists, executed Change Orders, and/or verified reports.
- 19.4.1.9.** Failure of the Contractor to maintain As-Built Drawings.
- 19.4.1.10.** Erroneous estimates by the Contractor of the value of the Work performed, or other false statements in an Application for Payment.
- 19.4.1.11.** Unauthorized deviations from the Contract Documents.

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

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

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

**19.4.1.15.** 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 State labor compliance monitoring and enforcement, if applicable.

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

**19.4.1.17.** Failure to properly maintain or clean up the Site.

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

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

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

**19.4.1.21.** Failure to pay any royalty, license or similar fees.

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

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

**19.4.2. Reallocation of Withheld Amounts**

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

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

**19.4.3. Payment After Cure**

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

**19.5. Subcontractor Payments**

**19.5.1. Payments to Subcontractors**

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

**19.5.2. No Obligation of District for Subcontractor Payment**

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

**19.5.3. Joint Checks**

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

**20. COMPLETION OF THE WORK**

**20.1. Completion**

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

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

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

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

**20.2. Close-Out/Certification Procedures**

**20.2.1. Punch List**

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

**20.2.2. Close-Out/Certification Requirements**

**20.2.2.1. Utility Connections**

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

**20.2.2.2. Record Drawings**

**20.2.2.2.1.** Contractor shall provide exact Record Drawings of the Work upon completion of the Project as indicated in the Specifications.

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

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

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

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

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

**20.3. Final Inspection**

**20.3.1.** Contractor shall comply with Punch List procedures as provided herein, and maintain the presence of a Project Superintendent and Project Manager until the Punch List is complete to ensure proper and timely completion of the Punch List. Under no circumstances shall Contractor demobilize its forces prior to completion of the Punch List. 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 acceptance, Architect and Project Inspector will inspect the Work and shall submit to Contractor and District a final inspection report noting the Work, if any, required in order to complete in accordance with the Contract Documents. Absent unusual circumstances, this report shall consist of the Punch List items not yet satisfactorily completed.

**20.3.2.** Upon Contractor's completion of all items on the Punch List and any other uncompleted portions of the Work, the Contractor shall notify the District and Architect, who shall again inspect such Work. If the Architect finds the Work complete and acceptable under the Contract Documents, the Architect will notify

Contractor, who shall then jointly submit to the Architect and the District its final Application for Payment.

**20.3.3. Final Inspection Requirements**

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

- 20.3.3.1.1.** The Work has been completed.
- 20.3.3.1.2.** All life safety items are completed and in working order.
- 20.3.3.1.3.** Mechanical and electrical Work are complete and tested, fixtures are in place, connected, and ready for tryout.
- 20.3.3.1.4.** Electrical circuits scheduled in panels and disconnect switches labeled.
- 20.3.3.1.5.** Painting and special finishes complete.
- 20.3.3.1.6.** Doors complete with hardware, cleaned of protective film, relieved of sticking or binding, and in working order.
- 20.3.3.1.7.** Tops and bottoms of doors sealed.
- 20.3.3.1.8.** Floors waxed and polished as specified.
- 20.3.3.1.9.** Broken glass replaced and glass cleaned.
- 20.3.3.1.10.** Grounds cleared of Contractor's equipment, raked clean of debris, and trash removed from Site.
- 20.3.3.1.11.** Work cleaned, free of stains, scratches, and other foreign matter, of damaged and broken material replaced.
- 20.3.3.1.12.** Finished and decorative work shall have marks, dirt, and superfluous labels removed.
- 20.3.3.1.13.** Final cleanup, as provided herein.

**20.4. Costs of Multiple Inspections**

More than two (2) requests of the District to make a final inspection shall be considered an additional service of District, Architect, Construction Manager, and/or Project Inspector, and all subsequent costs will be invoiced to Contractor and if funds are available, withheld from remaining payments.

## **20.5. Partial Occupancy or Use Prior to Completion**

### **20.5.1. District's Rights to Occupancy**

The District may occupy or use any completed or partially completed portion of the Work at any stage, and such occupancy shall not constitute the District's Final Acceptance of any part of the Work. Neither the District's Final Acceptance, the making of Final Payment, any provision in Contract Documents, nor the use or occupancy of the Work, in whole or in part, by District shall constitute acceptance of Work not in accordance with the Contract Documents nor relieve the Contractor or the Contractor's Performance Bond Surety from liability with respect to any warranties or responsibility for faulty or defective Work or materials, equipment and workmanship incorporated therein. In the event that the District occupies or uses any completed or partially completed portion of the Work, the Contractor shall remain responsible for payments, security, maintenance, heat, utilities, damage to the Work, insurance, the period for correction of the Work, and the commencement of warranties required by the Contract Documents unless the Contractor requests in writing, and the District agrees, to otherwise divide those responsibilities. Any dispute as to responsibilities shall be resolved pursuant to the Claims and Disputes provisions herein, with the added provision that during the dispute process, the District shall have the right to occupy or use any portion of the Work that it needs or desires to use.

### **20.5.2. Inspection Prior to Occupancy or Use**

Immediately prior to partial occupancy or use, the District, the Contractor, and the Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

### **20.5.3. No Waiver**

Unless otherwise agreed upon, partial or entire occupancy or use of a portion or portions of the Work shall not constitute beneficial occupancy or acceptance of the Work not complying with the requirements of the Contract Documents.

## **21. FINAL PAYMENT AND RETENTION**

### **21.1. Final Payment**

Upon receipt and approval of a valid and final Application for Payment, the Architect will issue a final Certificate of Payment. The District shall thereupon jointly inspect the Work and either accept the Work as complete or notify the Architect and the Contractor in writing of reasons why the Work is not complete. Upon acceptance of the Work of the Contractor as fully complete by the Governing Board of the District (that, absent unusual circumstances, will occur when the Punch List items have been satisfactorily completed), the District shall record a Notice of Completion with the County Recorder, and the Contractor shall, upon receipt of final payment from the District, pay the amount due Subcontractors.

**21.2. Prerequisites for Final Payment** The following conditions must be fulfilled prior to Final Payment:

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

**21.2.2.** A duly completed and executed conditional waiver and release upon final payment compliant with Civil Code section 8136, from the Contractor and each subcontractor of any tier and supplier to be paid from the final payment.

**21.2.3.** A duly completed and executed unconditional waiver and release upon progress payment compliant with Civil Code section 8134, from the Contractor and each subcontractor of any tier and supplier that was paid from the previous progress payments.

**21.2.4.** A duly completed and executed Document 00880, "AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS" from the Contractor.

**21.2.5.** The Contractor shall have made all corrections to the Work that are required to remedy any defects therein, to obtain compliance with the Contract Documents or any requirements of applicable codes and ordinances, or to fulfill any of the orders or directions of District required under the Contract Documents.

**21.2.6.** Each Subcontractor shall have delivered to the Contractor all written guarantees, warranties, applications, and bonds required by the Contract Documents for its portion of the Work.

**21.2.7.** Contractor must have completed all requirements set forth under "Close-Out/Certification Procedures," including, without limitation, submission of an approved set of complete Record Drawings.

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

**21.2.9.** The Contractor shall have delivered to the District all manuals and materials required by the Contract Documents.

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

**21.3. Retention**

**21.3.1.** The retention, less any amounts disputed by the District or that the District has the right to withhold pursuant to provisions herein, shall be paid:

**21.3.1.1.** After approval of the District by the Architect's Certificate of Payment,

**21.3.1.2.** After the satisfaction of the conditions set forth herein, and

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

**21.3.2.** No interest shall be paid on any retention, or on any amounts withheld due to a failure of the Contractor to perform, in accordance with the terms and conditions of the Contract Documents, except as provided to the contrary in any



Escrow Agreement between the District and the Contractor pursuant to Public Contract Code section 22300.

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

**22. UNCOVERING OF WORK**

If a portion of the Work is covered without Inspector or Architect approval or not in compliance with the Contract Documents, it must, if required in writing by the District, the Project Inspector, or the Architect, be uncovered for the Project Inspector's or the Architect's observation and be replaced at the Contractor's expense without change in the Contract Price or Contract Time.

**23. NONCONFORMING WORK AND CORRECTION OF WORK**

**23.1. Nonconforming Work**

**23.1.1.** Contractor shall promptly remove from Premises all Work identified by District as failing to conform to the Contract Documents whether incorporated or not. Contractor shall promptly replace and re-execute its own Work to comply with the Contract Documents without additional expense to the District and shall bear the expense of making good all work of other contractors destroyed or damaged by any removal or replacement pursuant hereto and/or any delays to the District or other Contractors caused thereby.

**23.1.2.** If Contractor does not remove Work that District has identified as failing to conform to the Contract Documents within a reasonable time, not to exceed **FORTY-EIGHT (48)** hours, District may remove it and may store any material at Contractor's expense. If Contractor does not pay expense(s) of that removal within ten (10) days' time thereafter, District may, upon ten (10) days' written notice, sell any material at auction or at private sale and shall deduct all costs and expenses incurred by the District and/or District may withhold those amounts from payment(s) to Contractor.

**23.2. Correction of Work**

**23.2.1. Correction of Rejected Work**

Pursuant to the notice provisions herein, the Contractor shall immediately correct the Work rejected by the District, the Architect, or the Project Inspector as failing to conform to the requirements of the Contract Documents, whether observed before or after Completion and whether or not fabricated, installed, or completed. The Contractor shall bear costs of correcting the rejected Work, including delay costs, additional testing, inspections, and compensation for the Inspector's or the Architect's services and expenses made necessary thereby.

**23.2.2. 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 acceptance of the Work under the Contract and termination of the Contract. The District shall give such notice promptly after discovery of the condition.

**23.3. District's Right to Perform Work**

**23.3.1.** If the Contractor should neglect to prosecute the Work properly or fail to perform any provisions of this contract, the District, after **FORTY-EIGHT (48)** hours written notice to the Contractor, may, without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

**23.3.2.** If it is found at any time, before or after completion of the Work, that Contractor has varied from the Drawings and/or Specifications, including, but not limited to, variation in material, quality, form, or finish, or in the amount or value of the materials and labor used, District may require at its option:

**23.3.2.1.** That all such improper Work be removed, remade or replaced, and all work disturbed by these changes be made good by Contractor at no additional cost to the District;

**23.3.2.2.** That the District deduct from any amount due Contractor the sum of money equivalent to the difference in value between the work performed and that called for by the Drawings and Specifications; or

**23.3.2.3.** That the District exercise any other remedy it may have at law or under the Contract Documents, including but not limited to the District hiring its own forces or another contractor to replace the Contractor's nonconforming Work, in which case the District shall either issue a deductive Change Order, a Field Work Directive, or invoice the Contractor for the cost of that work. Contractor shall pay any invoices within thirty (30) days of receipt of same or District may withhold those amounts from payment(s) to Contractor.

**24. TERMINATION AND SUSPENSION****24.1. District's Right to Terminate Contractor for Cause**

**24.1.1. 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 the following:

**24.1.1.1.** Contractor refuses or fails to execute the Work or any separable part thereof with sufficient diligence as will ensure its completion within the time specified or any extension thereof, or

**24.1.1.2.** Contractor fails to complete said Work within the time specified or any extension thereof, or

**24.1.1.3.** Contractor persistently fails or refused to perform Work or provide material of sufficient quality as to be in compliance with Contract Documents; or

**24.1.1.4.** Contractor files a petition for relief as a debtor, or a petition is filed against the Contractor without its consent, and the petition not dismissed within sixty (60) days; or

**24.1.1.5.** Contractor makes a general assignment for the benefit of its creditors, or a receiver is appointed on account of its insolvency; or

**24.1.1.6.** Contractor persistently or repeatedly refuses fails, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials to complete the Work in the time specified; or

**24.1.1.7.** Contractor fails to make prompt payment to Subcontractors, or for material, or for labor; or

**24.1.1.8.** Contractor persistently disregards laws, or ordinances, or instructions of District; or

**24.1.1.9.** Contractor fails to supply labor, including that of Subcontractors, that can work in harmony with all other elements of labor employed or to be employed on the Work; or

**24.1.1.10.** Contractor or its Subcontractor(s) is/are otherwise in breach, default, or in substantial violation of any provision of this Contract, including but not limited to a lapse in licensing or registration.

**24.1.2.** Notification of Termination

**24.1.2.1.** 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 shall cease and terminate. Upon Determination, Contractor shall not be entitled to receive any further payment until the entire Work is finished.

**24.1.2.2.** Upon Termination, District may immediately serve written notice of tender upon Surety whereby Surety shall have the right to take over and perform this Contract only if Surety:

**24.1.2.2.1.** Within three (3) days after service upon it of the notice of tender, gives District written notice of Surety's intention to take over and perform this Contract; and

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

**24.1.2.3.** Surety shall not utilize Contractor in completing the Project if the District notifies Surety of the District's objection to Contractor's further participation in the completion of the Project. Surety expressly agrees that any contractor which Surety proposes to fulfill Surety's obligations is subject to District's approval. District's approval shall not be unreasonably withheld, conditioned or delayed.

**24.1.2.4.** If Surety fails to notify District or begin performance as indicated herein, District may take over the Work and execute the Work to completion by any method it may deem advisable at the expense of Contractor and/or its Surety. Contractor and/or its Surety shall be liable to District for any excess cost or other damages the District incurs thereby. Time is of the essence in this Contract. If the District takes over the Work as herein provided, District may, without liability for so doing, take possession of and utilize in completing the Work such materials, appliances, plan, and other property belonging to Contractor as may be on the Site of the Work, in bonded storage, or previously paid for.

**24.1.3.** Effect of Termination

**24.1.3.1.** 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 the District by reason of the Contractor's failure to complete the Contract.

**24.1.3.2.** In the event that the District shall perform any portion of, or the whole of the Work, pursuant to the provisions of the General Conditions, the District shall not be liable nor account to the Contractor in any way for the time within which, or the manner in which, the Work is performed by the District or for any changes the District may make in the Work or for the money expended by the District in satisfying claims and/or suits and/or other obligations in connection with the Work.

**24.1.3.3.** In the event that the Contract is terminated for any reason, no allowances or compensation will be granted for the loss of any anticipated profit by the Contractor or any impact or impairment of Contractor's bonding capacity.

**24.1.3.4.** If the expense to the District to finish the Work exceeds the unpaid Contract Price, Contractor and Surety shall pay difference to District within twenty-one (21) days of District's request.

**24.1.3.5.** 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 it Subcontractor under Subcontracts or other obligations or commitments. All payments due the Contractor hereunder shall be subject to a right of offset by the District for expenses and damages suffered by the District as a result of any default, acts, or omissions of the Contractor. Contractor must include this assignment provision in all of its contracts with its Subcontractors.

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

**24.1.4.** Emergency Termination of Public Contracts Act of 1949

**24.1.4.1.** This Contract is subject to termination as provided by sections 4410 and 4411 of the Government Code of the State of California, being a portion of the Emergency Termination of Public Contracts Act of 1949.

**24.1.4.1.1.** Section 4410 of the Government Code states:

In the event a national emergency occurs, and public work, being performed by contract, is stopped, directly or indirectly, because of the freezing or diversion of materials, equipment or labor, as the result of an order or a proclamation of the President of the United States, or of an order of any federal authority, and the circumstances or conditions are such that it is impracticable within a reasonable time to proceed with a substantial portion of the work, then the public agency and the contractor may, by written agreement, terminate said contract.

**24.1.4.1.2.** Section 4411 of the Government Code states:

Such an agreement shall include the terms and conditions of the termination of the contract and provision for the payment of compensation or money, if any, which either party shall pay to the other or any other person, under the facts and circumstances in the case.

**24.1.4.2.** Compensation to the Contractor shall be determined at the sole discretion of District on the basis of the reasonable value of the Work done, including preparatory work. As an exception to the foregoing and at the District's discretion, in the case of any fully completed separate item or portion of the Work for which there is a separate previously submitted unit price or item on the accepted schedule of values, that price shall control. The District, at its sole

discretion, may adopt the Contract Price as the reasonable value of the work done or any portion thereof.

## **24.2. Termination of Contractor for Convenience**

**24.2.1.** District in its sole discretion may terminate the Contract upon three (3) days written notice to the Contractor. 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. In case of a termination for convenience, the Contractor shall have no claims against the District except:

**24.2.1.1.** The actual cost for labor, materials, and services performed that is unpaid and can be documented through timesheets, invoices, receipts, or otherwise, and

**24.2.1.2.** Five percent (5%) of the total cost of work performed as of the date of termination, or five percent (5%) of the value of the Work yet to be performed, whichever is less. This five percent (5%) amount shall be full compensation for all Contractor's and Subcontractor(s)' mobilization and/or demobilization costs and any anticipated loss profits resulting from termination of the Contractor for convenience.

## **24.3. Suspension of Work**

**24.3.1.** District in its sole discretion may suspend, delay or interrupt the Work in whole or in part for such period of time as the District may determine upon three (3) days written notice to the Contractor.

**24.3.1.1.** An adjustment may be made for changes in the cost of performance of the Work caused by any such suspension, delay or interruption. No adjustment shall be made to the extent:

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

**24.3.1.1.2.** That an equitable adjustment is made or denied under another provision of the Contract; or

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

**24.3.1.2.** Any adjustments in cost of performance may have a fixed or percentage fee as provided in the section on Format for Proposed Change Order herein. This amount shall be full compensation for all Contractor's and its Subcontractor(s)' changes in the cost of performance of the Contract caused by any such suspension, delay or interruption.

**25. CLAIMS AND DISPUTES**

**25.1. Performance During Dispute or Claim Process**

Contractor shall continue to perform its Work under the Contract and shall not cause a delay of the Work during any dispute, claim, negotiation, mediation, or arbitration proceeding, except by written agreement by the District.

**25.2. Definition of Dispute**

**25.2.1.** The term "Dispute" means a separate demand by the Contractor for:

**25.2.1.1.** A time extension;

**25.2.1.2.** 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

**25.2.1.3.** An amount of payment disputed by the District.

**25.3. Dispute Presentation**

**25.3.1.** If Contractor intends to apply for an increase in the Contract Price or Contract Time for any reason including, without limitation, the acts of District or its agents, Contractor shall, within ten (10) days after the event giving rise to the Dispute, give notice of the Dispute in writing and submit to the District a written statement of the damage sustained or time requested. On or before twenty (20) days after Contractor's written Notice of Dispute, Contractor shall file with the District an itemized statement of the details and amounts of its Dispute for any increase in the Contract Price or Contract Time. Otherwise, Contractor shall have waived and relinquished its dispute against the District and Contractor's claims for compensation or an extension of time shall be forfeited and invalidated. Contractor shall not be entitled to consideration for payment or time on account.

**25.3.2.** The Notice of Dispute shall identify:

**25.3.2.1.** The issues, events, conditions, circumstances and/or causes giving rise to the dispute;

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

**25.3.2.3.** The line-item costs for labor, material, and/or equipment, if applicable.

**25.3.3.** The Notice of Dispute shall include the following certification by the Contractor:

**25.3.3.1.** The undersigned Contractor certifies under penalty of perjury that the attached dispute is made in good faith; that the supporting data is accurate and complete to the best of my knowledge and belief; that the amount requested

accurately reflects the adjustment for which Contractor believes the District is liable; and that I am duly authorized to certify the dispute on behalf of the Contractor.

**25.3.3.2.** 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. Any costs, expenses, damages, or time extensions not included are deemed waived.

**25.3.4.** If a Dispute, or any portion thereof, remains unresolved upon satisfaction of all applicable Dispute Resolution requirements, the Contractor shall comply with all claim resolution requirements as provided in Public Contract Code section 20104.

**25.3.5.** Contractor shall bind its Subcontractors to the provisions of this section and will hold the District harmless against disputes by Subcontractors.

#### **25.4. Dispute Resolution**

**25.4.1.** Contractor shall file with the District the Notice of Dispute, including the documents necessary to substantiate it, on or before the day of submitting the application for final payment.

**25.4.2.** District shall respond in writing within forty-five (45) days of receipt of the Dispute or may request in writing within thirty (30) days of receipt of the Dispute any additional documentation supporting the Dispute or relating to defenses or claims District may have against the Contractor.

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

**25.4.2.2.** District's written response to the documented Dispute shall be submitted to the Contractor within fifteen (15) days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor to produce the additional information, whichever is greater.

**25.4.3.** If Contractor disputes the District's written response, Contractor may file a claim pursuant to the Claim Resolution requirements provided herein.

#### **25.5. Definition of Claim**

**25.5.1.** The term "Claim" means a dispute that remains unresolved at the conclusion of the Dispute Resolution requirements as provided herein.

#### **25.6. Claim Presentations**

**25.6.1.** Contractor must timely submit the Notice of Claim and all documents necessary to substantiate any Claim. Otherwise, Contractor shall have waived and relinquished its Claim against the District and Contractor's Claims for compensation or an extension of time shall be forfeited and invalidated, and Contractor shall not be entitled to consideration for payment or time on account of the instant matter. No Claim shall be presented prior to Project completion. Any statute that might



otherwise govern the presentation of an unresolved Dispute, including but not limited to Government Code section 900 et seq. and Public Contract Code section 20104 et seq. shall be tolled for all purposes during the course of construction on the Project.

**25.6.1.1.** All Claims shall include the following certification by the Contractor:

**25.6.1.1.1.** The undersigned Contractor certifies under penalty of perjury that the attached claim 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 claim on behalf of the Contractor.

**25.6.1.1.2.** Furthermore, Contractor understands that the value of the attached claim 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. Any costs, expenses, damages, or time extensions not included are deemed waived.

**25.6.2.** The attention of the Contractor is drawn to Government Code section 12650, et seq. regarding penalties for false claims.

**25.6.3.** If a Claim, or any portion thereof, remains in dispute upon satisfaction of all applicable Dispute and 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. For purposes of those provisions, the running of the time within which a Dispute or Claim must be presented to the District shall be tolled from the time the Contractor submits its written Dispute or Claim until the time the Dispute or Claim is denied, including any time utilized by any applicable meet and confer process.

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

## **25.7. Claim Resolution**

**25.7.1.** 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, after the conclusion of the Dispute Resolution requirements, attempt to resolve the Claim by those procedures set forth herein.

**25.7.2. Claims of \$375,000 or Less**

**25.7.2.1.** For all Claims of three hundred seventy-five thousand dollars (\$375,000) or less which arise between Contractor and District, the procedure set forth in Public Contract Code section 20104 et seq. shall apply:

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

**25.7.2.1.2.** For claims of less than fifty thousand dollars (\$50,000), the District shall respond in writing within forty-five (45) days of receipt of the Claim or may request in writing within thirty (30) days of receipt of the Claim any additional documentation supporting the claim or relating to defenses or claims the District may have against the Contractor.

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

**25.7.2.1.2.2.** District's written response to the documented Claim shall be submitted to the Contractor within fifteen (15) days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor to produce the additional information, whichever is greater.

**25.7.2.1.3.** For claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the District shall respond in writing to all written Claims within sixty (60) days of receipt of the claim, or may request, in writing, within thirty (30) days of receipt of the Claim any additional documentation supporting the Claim or relating to defenses or claims the District may have against the Contractor.

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

**25.7.2.1.3.2.** The District's written response to the claim, as further documented, shall be submitted to the Contractor within thirty (30) days after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor to produce the additional information or requested documentation, whichever is greater.

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

**25.7.2.3.** Following the meet and confer conference, if the claim or any portion of it remains in dispute, the Contractor may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions the running of the time within which a claim must be filed shall be tolled from the time the Contractor submits its written Claim until the time the Claim is denied, including any period of time utilized by the meet and confer process.

**25.7.2.4.** For any civil action filed to resolve claims filed pursuant to this section, within sixty (60) days, but no earlier than thirty (30) days, following the filing of responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within fifteen (15) days by both parties of a disinterested third person as mediator, shall be commenced within thirty (30) days of the submittal, and shall be concluded within fifteen (15) days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

**25.7.2.5.** If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of the Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986, (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

**25.7.2.6.** 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 at the legal rate on any arbitration award or judgment. Interest shall begin to accrue on the date the suit is filed in a court of law.

**25.7.3.** Claims Over \$375,000

**25.7.3.1.** For all Claims of over three hundred seventy-five thousand dollars (\$375,000) which arise between a Contractor and the District, the following procedure shall apply:

**25.7.3.1.1.** The parties agree to first endeavor to settle the dispute in an amicable manner by mediation before having recourse to a judicial forum. The Claim shall be identified in writing to the District within thirty (30) days from the date of Contractor's application for final payment of all Contract balances not in dispute and shall be mediated within one hundred and twenty (120) days from the submission of the Claim to the District. For purposes of filing a Claim to mediation, the running of the time within which mediation must be filed shall be tolled from the time the Contractor submits its written Claim until the time the Claim is denied. Mediator fees and administrative costs of the mediation shall be shared equally by the parties.

**25.7.3.1.2.** District may assert any counter-claims it has for damages against Contractor, including, but not limited to, defective Work, delay damages, and liquidated damages.

**25.7.4.** Contractor shall bind its Subcontractors to the provisions of this section and will hold the District harmless against disputes by Subcontractors.

**25.8. Dispute and Claim Resolution Non-Applicability**

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

**25.8.1.1.** Personal injury, wrongful death or property damage claims;

**25.8.1.2.** Latent defect or breach of warranty or guarantee to repair;

**25.8.1.3.** Stop payment notices;

**25.8.1.4.** District's rights set forth in the Article on Suspension and Termination;

**25.8.1.5.** Disputes arising out of State labor compliance, if applicable; or

**25.8.1.6.** 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 Dispute and Claim Resolution requirements provided in this Article.

**25.9.** Contractor's costs incurred in seeking relief under this Article are not recoverable from the District.

**26. STATE LABOR, WAGE & HOUR, APPRENTICE, AND RELATED PROVISIONS**

**26.1. Labor Compliance and Enforcement**

Since this Project is subject to labor compliance and enforcement by the Department of Industrial Relations ("DIR"), Contractor specifically acknowledges and understands that it shall perform the Work of this Agreement while complying with all the applicable provisions of Division 2, Part 7, Chapter 1, of the Labor Code and Title 8 of the California Code of Regulations, including, without limitation, the requirement that the Contractor and all Subcontractors shall timely furnish complete and accurate electronic certified payroll records directly to the DIR. The District may not issue payment if this requirement is not met.

**26.2. Wage Rates, Travel, and Subsistence**

**26.2.1.** Pursuant to the provisions of article 2 (commencing at section 1770), chapter 1, part 7, division 2, of the Labor Code of California, the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which this public work is to be performed for each craft, classification, or type of worker needed to execute this Contract are on file at the District's principal office and copies will be made available to any interested party on request. Contractor shall obtain and post a copy of these wage rates at the job site.

**26.2.2.** Holiday and overtime work, when permitted by law, shall be paid for at the general prevailing rate of per diem wages for holiday and overtime work on file with the Director of the Department of Industrial Relations, unless otherwise specified. The holidays upon which those rates shall be paid need not be specified by

the District, but shall be all holidays recognized in the applicable collective bargaining agreement. If the prevailing rate is not based on a collectively bargained rate, the holidays upon which the prevailing rate shall be paid shall be as provided in Section 6700 of the Government Code.

**26.2.3.** Contractor shall pay and shall cause to be paid each worker engaged in Work on the Project the general prevailing rate of per diem wages determined by the Director of the Department of Industrial Relations, regardless of any contractual relationship which may be alleged to exist between Contractor or any Subcontractor and such workers.

**26.2.4.** If during the period this bid is required to remain open, the Director of the Department of Industrial Relations determines that there has been a change in any prevailing rate of per diem wages in the locality in which the Work under the Contract is to be performed, such change shall not alter the wage rates in the Notice to Bidders or the Contract subsequently awarded.

**26.2.5.** Pursuant to Labor Code section 1775, Contractor shall, as a penalty to District, forfeit the statutory amount (believed by the District to be currently up to two hundred dollars (\$200) for each calendar day, or portion thereof, for each worker paid less than the prevailing rates, determined by the District and/or the Director, for the work or craft in which that worker is employed for any public work done under Contract by Contractor or by any Subcontractor under it. The difference between such prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate shall be paid to each worker by Contractor.

**26.2.6.** Any worker employed to perform Work on the Project, which Work is not covered by any classification listed in the general prevailing wage rate of per diem wages determined by the Director, shall be paid not less than the minimum rate of wages specified therein for the classification which most nearly corresponds to Work to be performed by him, and such minimum wage rate shall be retroactive to time of initial employment of such person in such classification.

**26.2.7.** Pursuant to Labor Code section 1773.1, per diem wages are deemed to include employer payments for health and welfare, pension, vacation, travel time, subsistence pay, and apprenticeship or other training programs authorized by Labor Code section 3093, and similar purposes.

**26.2.8.** Contractor shall post at appropriate conspicuous points on the Site of Project, a schedule showing all determined minimum wage rates and all authorized deductions, if any, from unpaid wages actually earned. In addition, Contractor shall post a sign-in log for all workers and visitors to the Site, a list of all subcontractors of any tier on the Site, and the required Equal Employment Opportunity poster(s).

### **26.3. Hours of Work**

**26.3.1.** As provided in article 3 (commencing at section 1810), chapter 1, part 7, division 2, of the Labor Code, eight (8) hours of labor shall constitute a legal days work. The time of service of any worker employed at any time by Contractor or by any Subcontractor on any subcontract under this Contract upon the Work or upon any part of the Work contemplated by this Contract shall be limited and restricted by Contractor to eight (8) hours per day, and forty (40) hours during any one week, except as hereinafter provided. Notwithstanding the provisions hereinabove set forth, Work performed by employees of Contractor in excess of eight (8) hours per day and forty (40) hours during any one week, shall be permitted upon this public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half times the basic rate of pay.

**26.3.2.** Contractor shall keep and shall cause each Subcontractor to keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by Contractor in connection with the Work or any part of the Work contemplated by this Contract. The record shall be kept open at all reasonable hours to the inspection of District and to the Division of Labor Standards Enforcement of the DIR.

**26.3.3.** Pursuant to Labor Code section 1813, Contractor shall as a penalty to the District forfeit the statutory amount (believed by the District to be currently twenty-five dollars (\$25)) for each worker employed in the execution of this Contract by Contractor or by any Subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week in violation of the provisions of article 3 (commencing at section 1810), chapter 1, part 7, division 2, of the Labor Code.

**26.3.4.** Any Work necessary to be performed after regular working hours, or on Sundays or other holidays shall be performed without additional expense to the District.

### **26.4. Payroll Records**

**26.4.1.** Contractor shall upload, and shall cause each Subcontractor performing any portion of the Work under this Contract to upload, an accurate and complete certified payroll record ("CPR") using the Public Works Payroll Reporting Form, including certification (DIR [Form A-1-131](#) or current version), and Statement of Employer Payments (DIR Form PW 26) through the eCPR application using PDF to the DIR at <https://apps.dir.ca.gov/ecpr/DAS/AltLogin> or current application and URL, showing the name, address, social security number, work classification, straight time, and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by the Contractor and/or each Subcontractor in connection with the Work.

**26.4.1.1.** The CPRs enumerated hereunder shall be filed directly with the DIR on a weekly basis or to the requesting party, whether the District or DIR, within ten (10) days after receipt of each written request. The CPRs from the Contractor and each Subcontractor for each week shall be provided on or before Wednesday of the week following the week covered by the CPRs. District may not make any payment to Contractor until:

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

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

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

**26.4.2.1.** A certified copy of an employee's CPR shall be made available for inspection or furnished to the employee or his/her authorized representative on request.

**26.4.2.2.** CPRs shall be made available for inspection or furnished upon request to a representative of District, Division of Labor Standards Enforcement, Division of Apprenticeship Standards, and/or the DIR.

**26.4.2.3.** CPRs shall be made available upon request by the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through the District, Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested CPRs have not been provided pursuant to the provisions herein, the requesting party shall, prior to being provided the records reimburse the costs of preparation by Contractor, Subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal office of Contractor.

**26.4.3.** Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by District, Division of Apprenticeship Standards, or Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of Contractor awarded Contract or performing Contract shall not be marked or obliterated.

**26.4.4.** Contractor shall inform District of the location of the records enumerated hereunder, including the street address, city, and county, and shall, within five (5) working days, provide a notice of change of location and address.

**26.4.5.** In the event of noncompliance with the requirements of this section, Contractor shall have ten (10) days in which to comply subsequent to receipt of written notice specifying in what respects Contractor must comply with this section. Should noncompliance still be evident after the ten (10) day period, Contractor shall, as a penalty to District, forfeit up to one hundred dollars (\$100) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of Division of Apprenticeship Standards or Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due.

**26.5. [RESERVED]**

**26.6. Apprentices**

**26.6.1.** 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.

**26.6.2.** 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.

**26.6.3.** 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.

**26.6.4.** 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.

**26.6.5.** 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.

**26.6.6.** 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.

**26.6.7.** 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:

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

**26.6.7.2.** 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.

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

**26.6.9.** 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, San Francisco, California 94102.

**26.7. Non-Discrimination**

**26.7.1.** Contractor herein agrees not to discriminate in its recruiting, hiring, promotion, demotion, or termination practices on the basis of race, religious creed, national origin, ancestry, sex, age, or physical handicap in the performance of this Contract and to comply with the provisions of the California Fair Employment and Housing Act as set forth in part 2.8 of division 3 of the California Government Code, commencing at section 12900; the Federal Civil Rights Act of 1964, as set forth in Public Law 88-352, and all amendments thereto; Executive Order 11246, and all administrative rules and regulations found to be applicable to Contractor and Subcontractor.

**26.7.2.** 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.

**26.8. 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 (8 Cal. Code of Regs., §1 et seq.).

**27. [RESERVED]**

**28. MISCELLANEOUS**

**28.1. Assignment of Antitrust Actions**

**28.1.1.** Section 7103.5(b) of the Public Contract Code states:

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

**28.1.2.** Section 4552 of the Government Code states:

In submitting a bid to a public purchasing body, the bidder offers and agrees that if the bid is accepted, it will assign to the purchasing body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, materials, or services by the bidder for sale to the purchasing body pursuant to the bid. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the bidder.

**28.1.3.** Section 4553 of the Government Code states:

If an awarding body or public purchasing body receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under this chapter, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the public body any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the public body as part of the bid price, less the expenses incurred in obtaining that portion of the recovery.

**28.1.4.** Section 4554 of the Government Code states:

Upon demand in writing by the assignor, the assignee shall, within one year from such demand, reassign the cause of action assigned under this part if the assignor has been or may have been injured by the violation of law for which the cause of action arose and (a) the assignee has not been injured thereby, or (b) the assignee declines to file a court action for the cause of action.

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

**28.2. Excise Taxes**

If, under Federal Excise Tax Law, any transaction hereunder constitutes a sale on which a Federal Excise Tax is imposed and the sale is exempt from such Federal Excise Tax because it is a sale to a State or Local Government for its exclusive use, District, upon request, will execute documents necessary to show (1) that District is a political subdivision of the State for the purposes of such exemption, and (2) that the sale is for the exclusive use of District. No Federal Excise Tax for such materials shall be included in any Contract Price.

**28.3. Taxes**

Contract Price is to include any and all applicable sales taxes or other taxes that may be due in accordance with section 7051 of the Revenue and Taxation Code; Regulation 1521 of the State Board of Equalization or any other tax code that may be applicable.

**28.4. Shipments**

All shipments must be F.O.B. destination to Site or sites, as indicated in the Contract Documents. There must be no charge for containers, packing, unpacking, drayage, or insurance. The total Contract Price shall be all inclusive (including sales tax) and no additional costs of any type will be considered.

**28.5. Compliance with Government Reporting Requirements**

If this Contract is subject to federal or other governmental reporting requirements because of federal or other governmental financing in whole or in part for the Project of which it is part, or for any other reason, Contactor shall comply with those reporting requirements at the request of the District at no additional cost.

END OF DOCUMENT

## DOCUMENT 00 73 13

**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. Master Key.** Upon request, the District may, at its own discretion, provide a master key 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 master key is lost or stolen or if any unauthorized party obtains a copy of the key or access to the school.

**2.3. Maintaining Services.** The Contractor is advised that Work is to be performed in spaces regularly scheduled for instruction. Interruption and/or periods of shutdown of public access, electrical service, water service, lighting, or other utilities shall be only as arranged in advance with the District. Contractor shall provide temporary services to all facilities interrupted by Contractor's Work.

**2.4. 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.

**2.5. 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.

**2.6. Work During Instructional Time.** By submitting its bid, Contractor affirms that Work may be performed during ongoing instruction in existing facilities. If so, Contractor agrees to cooperate to the best of its ability to minimize any disruption to the school up to, and including, rescheduling specific work activities, at no additional cost to District.

**2.7. No Work During Student Testing.** Contractor shall, at no additional cost to the District and at the District's request, coordinate its Work to not disturb District

students including, without limitation, not performing any Work when students at the Site are taking State-required tests.

**3. Substitution for Specified Items**

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

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

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

**3.2.** A request for a substitution shall be submitted as follows:

**3.2.1.** Contractor shall notify the District in writing of any request for a substitution at least Seven (7) days prior to bid opening as indicated in the Instructions to Bidders.

**3.3.** Within Ten (10) days after the date of the Notice of Award, Contractor shall provide data substantiating a request for substitution of "an equal" item, including but not limited to the following:

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

**3.3.2.** Available maintenance, repair or replacement services;

**3.3.3.** Increases or decreases in operating, maintenance, repair, replacement, and spare parts costs;

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

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

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

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

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

**3.4.3.** The Contractor shall be fully responsible for the installation of the substitute and any changes in the Work required, either directly or indirectly, because of the acceptance of such substitute, with no increase in Contract Price or Contract Time. Incidental changes or extra component parts required to accommodate the substitute will be made by the Contractor without a change in the Contract Price or Contract Time;

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

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

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

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

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

**4. Weather Days**

Delays due to Adverse Weather conditions will only be permitted in compliance with the provisions in the General Conditions and only if the number of days of Adverse Weather exceeds the following parameters and Contractor can verify that the excess days of Adverse Weather caused delays:

January	<b>11</b>	July	<b>0</b>
February	<b>10</b>	August	<b>0</b>
March	<b>10</b>	September	<b>1</b>
April	<b>6</b>	October	<b>4</b>
May	<b>3</b>	November	<b>7</b>
June	<b>1</b>	December	<b>10</b>

**5. Owner-Controlled or Wrap-Up Insurance Program**

Contractor and all Subcontractors under the Contractor shall participate in and comply with the owner-controlled or wrap-up insurance program (OCIP). In addition, Contractor shall procure and maintain, at its own expense, until completion and final acceptance of the Work at least the following insurance from insurance companies with an A.M. Best rating of no less than **A: VII**, except for those coverages provided by the OCIP as described in the OCIP Manual:

<b>Commercial General Liability</b>	Personal Injury Liability, Broad Form Property Damage including completed operations, and Explosion, Collapse and Underground Hazards	<b>\$2,000,000</b>
<b>Automobile Liability – Any Auto</b>	Bodily Injury and Property Damage	<b>\$1,000,000</b>
<b>Workers Compensation</b>		Statutory limits pursuant to State law
<b>Employers' Liability</b>		<b>\$1,000,000</b>

**6. Permits, Certificates, Licenses, Fees, Approval****6.1. Payment of Fees for Permits, Certificates, Licenses, and Registrations.**

As required in the General Conditions, the Contractor shall secure and pay for all permits, licenses, registrations, and certificates necessary for the prosecution of the Work with the exception of the following:

- 6.1.1. WATER CONNECTION FEES**
- 6.1.2. SANITARY SEWER CONNECTION FEES**
- 6.1.3. STORM DRAIN CONNECTION FEES**

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.

## **7. As-Builts and Record Drawings**

**7.1.** When called for by Division 1, Contractor shall submit As-Built Drawings pursuant to the Contract Documents consisting of one set of As-Built Drawings in 30" x 42" color reprographic; plus one set of As-Built Drawings in pdf format provided on disc or thumb drive.

**7.2.** Contractor shall submit Record Drawings pursuant to the Contract Documents consisting of one set of computer-aided design and drafting ("CADD") files, plus one set of Record Drawings on 30" x 42" color reprographic, plus one set of Record Drawings in pdf format provided on disc or thumb drive.

## **8. Construction Manager**

The District will use a Construction Manager on the Project that is the subject of this Contract. Gilbane Building Company is the Construction Manager for this Project.

## **9. Program Manager**

Gilbane Building Company is the Program Manager designated for the Project that is the subject of this Contract.

## **10. Preliminary Schedule of Values**

The preliminary schedule of values shall include, at a minimum, the following information and the following structure:

Replace provision in the General Conditions with the following provisions:

**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 **5%**;

**10.1.1.2.3.3.** Bonds and insurance combined to equal not more than **1%**.

## **11. Construction Work Hours**

Construction activities on campus shall be restricted to between the hours of 7:00 A.M. and 7:00 P.M. on weekdays and Saturdays. Work on Sunday and holidays upon request and acceptance from the District.

END OF DOCUMENT



## DOCUMENT 00 73 56

**HAZARDOUS MATERIALS  
PROCEDURES & REQUIREMENTS****1. Summary**

This document includes information applicable to hazardous materials and hazard waste abatement.

**2. Notice of Hazardous Waste or Materials Conditions**

- a. Contractor shall give notice in writing to the District, the Construction Manager, and the Architect promptly, before any of the following conditions are disturbed, and in no event later than twenty-four (24) hours after first observance, of any:
  - (1) Material that Contractor believes may be 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 law and contract 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 or other hazardous materials;
  - (3) The generation, processing, treatment, storage, transport, disposal, destruction, or other management of asbestos, PCB, lead, petroleum, or hazardous waste materials or other waste materials of any kind; and
  - (4) The protection of environmentally sensitive areas such as wetlands and coastal areas.

## **6. Disposal**

- a. Contractor has the sole responsibility for determining current waste storage, handling, transportation, and disposal regulations for the job Site and for each waste disposal facility. Contractor must comply fully at its sole cost and expense with these regulations and any applicable law. District may, but is not obligated to, require submittals with this information for it to review consistent with the Contract Documents.
- b. Contractor shall develop and implement a system acceptable to District to track hazardous waste from the Site to disposal, including appropriate

"Hazardous Waste Manifests" on the EPA form, so that District may track the volume of waste it put in each landfill and receive from each landfill a certificate of receipt.

- c. Contractor shall provide District with the name and address of each waste disposal facility prior to any disposal, and District shall have the express right to reject any proposed disposal facility. Contractor shall not use any disposal facility to which District has objected. Contractor shall document actual disposal or destruction of waste at a designated facility by completing a disposal certificate or certificate of destruction forwarding the original to the District.

## **7. Permits**

- a. Before performing any of the Work, and at such other times as may be required by applicable law, Contractor shall deliver all requisite notices and obtain the approval of all governmental and quasi-governmental authorities having jurisdiction over the Work. Contractor shall submit evidence satisfactory to District that it and any disposal facility
  - (1) have obtained all required permits, approvals, and the like in a timely manner both prior to commencement of the Work and thereafter as and when required by applicable law, and
  - (2) are in compliance with all such permits, approvals and the regulations.

For example, before commencing any work in connection with the Work involving asbestos-containing materials, or PCBs, or other hazardous materials subject to regulation, Contractor agrees to provide the required notice of intent to renovate or demolish to the appropriate state or federal agency having jurisdiction, by certified mail, return receipt requested, or by some other method of transmittal for which a return receipt is obtained, and to send a copy of that notice to District. Contractor shall not conduct any Work involving asbestos-containing materials or PCBs unless Contractor has first confirmed that the appropriate agency having jurisdiction is in receipt of the required notification. All permits, licenses, and bonds that are required by governmental or quasi-governmental authorities, and all fees, deposits, tap fees, offsite easements, and asbestos and PCB disposal facilities expenses necessary for the prosecution of the Work, shall be procured and paid for by Contractor. Contractor shall give all notices and comply with the all applicable laws bearing on the conduct of the Work as drawn and specified. If Contractor observes or reasonably should have observed that Plans and Specifications and other Contract Documents are at variance therewith, it shall be responsible for promptly notifying District in writing of such fact. If Contractor performs any Work contrary to applicable laws, it shall bear all costs arising therefrom.

- b. In the case of any permits or notices held in District's name or of necessity to be made in District's name, District shall cooperate with Contractor in securing the permit or giving the notice, but the Contractor shall prepare for District review and execution upon approval, all necessary applications, notices, and other materials.

**8. Indemnification**

To the 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

DOCUMENT 01 11 00

**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 may consist of the following:

Soccer/Lacrosse: Replacement of existing natural turf field with a new synthetic turf field. Installation of an all-weather synthetic track surface D-Zone with new long jump/triple jump events. Work includes improvements to existing drainage, electrical and irrigation system. Installation of Owner Furnished, Contractor Installed scoreboard.

Tennis Courts: Removal of existing field house and gravel storage area and installation of six (6) new tennis courts, court facility, perimeter fencing, gravel pathway, drinking fountain, site furnishing and new drainage system.

Sand Volleyball/Futsal Field: Removal of existing tennis courts and installation of new sand volleyball facility and synthetic turf futsal field. Work includes new concrete bleachers, perimeter fencing, utility systems and site furnishing.

Removal of existing synthetic grounds, clear and grubbing of landscaping and installation of new synthetic turf to the physical education courtyards.

**1.03 CONTRACTS**

- A. Perform the Work under a single, fixed-price Contract.

**1.04 WORK BY OTHERS**

- A. Work on the Project that will be performed and completed prior to the start of the Work of this Contract:

(1) None.

- B. Work on the Project that will be performed by others concurrent with the Work of this Contract:

- (1) None.

**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 or 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 security 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

DOCUMENT 01 22 00

**ALTERNATES AND UNIT PRICING****PART 1 – ALTERNATES****1.01 RELATED DOCUMENTS AND PROVISIONS:**

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions;
- B. Special Conditions;
- C. Bid Form and Proposal;
- D. Instruction to Bidders.

**1.02 DESCRIPTION**

The items of work indicated below propose modifications to, substitutions for, additions to and/or deletions from the various parts of the Work specified in other Sections of the Specifications. The acceptance or rejection of any of the alternates is strictly at the option of the District subject to District's acceptance of Contractor's stated prices contained in this Proposal.

**1.03 GENERAL**

Where an item is omitted, or scope of Work is decreased, all Work pertaining to the item whether specifically stated or not, shall be omitted and where an item is added or modified or where scope of Work is increased, all Work pertaining to that required to render same ready for use on the Project in accordance with intention of Drawings and Specifications shall be included in an agreed upon price amount.

**1.04 BASE BID**

The Base Bid includes all work required to construct the Project completely and in accordance with the Contract Documents.

**1.05 ALTERNATES****Alternate #1: Add Data Network Infrastructure – POC Data Vault**

Materials and labor to trench and install conduit, pullboxes and accessories for data network from (N) IDF to (E) data vault per Sheet E1.1

**Alternate #2: Add Data Network Infrastructure – POC Physical Education Building**

Materials and labor to trench and install conduit, pullboxes and accessories for data network from (N) IDF to (E) MDF in Physical Education Building per Sheet E1.1.

**Alternate #3: Add Mobile Press Box – Soccer**

Procure, assemble and place one (1) mobile press box per Specifications 12 93 00, D; Donkey Ultimate Media Package with Storage.

The above Alternate descriptions are general in nature and for reference purposes only. The Contract Documents, including, without limitation, the Drawings and Specifications, must be referred to for the complete scope of Work.

**PART 2 - UNIT PRICING**

**2.01 GENERAL**

Contractor shall completely state all required figures based on Unit Prices listed below. Where scope of Work is decreased, all Work pertaining to the item, whether specifically stated or not, shall be omitted and where scope of Work is increased, all work pertaining to that item required to render same ready for use on the Project in accordance with intention of Drawings and Specifications shall be included in an agreed upon price amount.

**2.02 UNIT PRICES**

Furnish unit prices for each of the named items on a square foot, lineal foot, or per each basis, as applies. Unit prices shall include all labor, materials, services, profit, overhead, insurance, bonds, taxes, and all other incidental costs of Contractor, subcontractors, and supplier(s).

- 1. None.**

END OF DOCUMENT

DOCUMENT 01 25 13

**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;
- 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.
- D. 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.
- E. 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.

- F. 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.

**PART 2 – PRODUCTS** Not Used.

**PART 3 – EXECUTION** Not Used.

END OF DOCUMENT

**SECTION 01 26 00**

**CONTRACT MODIFICATION PROCEDURES**

**PART 1 - GENERAL**

**1.1 SECTION INCLUDES**

- A. This section specifies administrative and procedural requirements for handling and processing contract modifications.

**1.2 RELATED SECTIONS**

- A. Section 01 29 75: Applications and Certifications for Payment.
- B. Section 01 60 00: Product Requirements for administrative procedures for handling request for substitution after award of contract.

**1.3 CHANGE ORDER PROPOSAL REQUESTS**

- A. Owner-Initiated Proposal Requests: The Architect will issue a detailed description of proposed changes in the Work that will require adjustment to the Contract Sum or Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Proposal requests issued by the Architect through the Program Manager are not to be considered as an instruction either to stop work in progress or to execute the proposed change.
  - 2. Should the Owner contemplate making a change in the Work or a change in the Contract Time of Completion, the Architect will issue a "Proposal Request" through the Program Manager to the Contractor.
  - 3. Within 10 working days of receipt of a Proposal Request, initiated by the Owner, submit a quotation of cost necessary to execute the change to the Program Manager for Owner's review.
    - a. Include a list of quantities of products required and unit costs, with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
    - b. Indicate applicable taxes, delivery charges, equipment rates and hours, and amounts of trade discounts.
    - c. Include labor rates with man-hours appropriate to the change.
    - d. Include a line item for applicable overhead and profit and/or fees.
    - e. Include a statement indicating the effect the proposed change in Work will have on the Contract Time.

**1.4 CONSTRUCTION CHANGE DIRECTIVE**

- A. Construction Change Directive: The Construction Change Directive is an architect issued document to change the DSA approved documents.
- B. Field Work Directive: The Field Work Directive instructs the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
  - 1. The Field Work Directive contains a complete description of the change in the Work. It also designates the method to be followed to determine change in the Contract Sum or Contract Time.

**1.5 MINOR CHANGES IN WORK**

- A. The Architect will issue an Architect's Supplemental Instructions (ASI) authorizing minor changes in Work, not involving adjustment to the Contract Sum or Contract Time.

**1.6 CHANGE ORDER PROCEDURES**

- A. Upon the Owner's approval of a Proposal Request, the Program Manager will issue a Change Order for signatures by the Owner and the Contractor. All Change Orders shall be submitted to DSA per Group I, Chapter 4, Part I, Title 24, CBD by the Architect unless otherwise noted. Change Orders will be submitted to the Board of Trustees for approval on a monthly basis.
- B. Basis for Labor Wage Rates: The rates quoted in the Change Order Markup Format will be based upon the Labor Rate Worksheet submitted by the General Contractor within two weeks of Award of Contract. All Subcontractors must submit Labor Rate Worksheets when they first provide a quote for extra work. This Worksheet will provide the basis for any future change orders for which they perform work.
- C. General Contractor Mark-ups on Changes to the Work: In the event of Changes to the Work, pursuant to Article 8 of the General Conditions, the General Contractor's mark-up for all overhead, General Conditions costs and profit, shall be as follows:

Mark-ups on General Contractor's Direct Work Only: 15%  
 Mark-up on Subcontractors (all tiers) Direct Work Only: 5%

The 5% mark-up on Subcontractors is based upon their costs, not the total of their costs and their mark-up. Mark-ups upon subcontractor mark-ups are not allowed. The foregoing limitation on mark-ups shall apply regardless of the number of subcontractors, of any tier, performing any portion of such Change to the work. The contractor may add the actual bond premium fee of no greater than one percent (1%) of the actual direct costs for performance of the change.

- D. Subcontractor Mark-ups on Changes to the Work: In the event of Changes to the Work, pursuant to Article 8 of the General Conditions, the Subcontractor's mark-up for all overhead, General Conditions costs and profit, shall be as follows:

Mark-ups on Subcontractor's Direct Work Only: 15%  
 Mark-up on Lower Tier Subcontractor's Direct Work Only: 5%

The 5% mark-up on Lower Tier Subcontractors is based upon their costs, not the total of their costs and their mark-up. Mark-ups upon subcontractor mark-ups are not allowed. The

foregoing limitation on mark-ups shall apply regardless of the number of subcontractors, of any tier, performing any portion of such Change to the work.



Labor Rate Worksheet

Labor Rate Worksheet (Journeyman)

		Hourly Rate	
		Vacation	\$ _____
A. Trade/Classification Group:		Taxable Gross Total	\$ _____
Hourly Rate (Base):	\$ _____		
B. Fringe Benefits:		\$ _____	
1. Health/Welfare		\$ _____	
2. Pension		\$ _____	
3. Apprenticeship		\$ _____	
4. Other Detail		\$ _____	
Sub-Total Fringe Benefits:		\$ _____	
C. Total Rate of Base + Fringes =		\$ _____	
D. Labor Burdens:			
	% Amount	Base	\$ Amount
1. F.I.C.A.	0.00%	X \$ _____	= \$ _____
2. S.U.I.	0.00%	X \$ _____	= \$ _____
3. F.U.I.	0.00%	X \$ _____	= \$ _____
4. Workmen's Comp	0.00%	X \$ _____	= \$ _____
5. Liability	0.00%	X \$ _____	= \$ _____
E. Total Hourly Rate with Fringe Benefits and Burden:			\$ _____
			Total \$ _____

## Change Order Markup Format

Description of change: \_\_\_\_\_

### Subcontractor's Costs

A.	Subcontractor Materials (include itemized quantity and unit costs plus sales tax)	\$ _____
B.	Subcontractor Labor (include itemized hours, trades/classification, and rates)	\$ _____
C.	Subcontractor Equipment Rentals (include invoices or standardized rate charges for contractor-owned equipment)	\$ _____
D.	Sub-Total Subcontractor	\$ _____
E.	Subcontractor markup on Subcontractor costs (15% of Line D)	\$ _____
F.	Subcontractor Total (Line D + Line E)	\$ _____

### General Contractor's Costs

G.	GC Materials (include itemized quantity and unit costs plus salestax)	\$ _____
H.	GC Labor (Include itemized hours, trades and rates)	\$ _____
I.	GC Equipment Rentals (Include invoices or standardized rate charges for contractor-owned equipment)	\$ _____
J.	Sub-Total General Contractor	\$ _____
K.	General Contractor's markup on GC work (15% of Line J)	\$ _____
L.	General Contractor Total (Line J + Line K)	\$ _____

### General Contractor Markup on Subcontractors and Bond Fees

M.	Costs of all Subcontractors (attach separate sheets for multiple Subcontractors performing any portion of this change and add up all line D's)	\$ _____
N.	General Contractor's Mark-up rate on Subcontractors' work (5% of Line M)	\$ _____
O.	Sub-Total (All Line F's + Line L + Line N)	\$ _____
P.	All Direct Costs (all Line D's + Line J)	\$ _____
Q.	Mark-Up for Bond Fees (1% of Line P)	\$ _____
	<b>TOTAL CHANGE PROPOSAL (Line O + Line Q)</b>	<b>\$ _____</b>

**PART 2- PRODUCTS (NOT USED)**

**PART 3- EXECUTION (NOT USED)**

**END OF SECTION**

**SECTION 01 29 00****APPLICATIONS AND CERTIFICATIONS FOR PAYMENT****PART 1 - GENERAL****1.01 SECTION INCLUDES**

- A. This Section specifies administrative requirements governing the Contractor's Application for Payment.
- B. Submit Applications for Payment to Program Manager in accordance with the schedule established by Conditions of the Contract and Agreement between Owner and Contractor.
- C. Related Requirements in Other Parts of the Project Manual:
  - 1. Contract Sum and Payments: Agreement between Owner and Contractor.
  - 2. Progress Payments, Retainage and Final Payment: Conditions of the Contract.
  - 3. Closeout Procedures: Section 01 77 00 Closeout Procedures.

**1.02 FORMAT AND DATA REQUESTED**

- A. Format and Content: Provide a detailed breakdown of the agreed Contract Sum showing values allocated to each of the various parts of the Work, as specified herein and in other provisions of the Contract Documents, to establish the Schedule of Values. For multi-phase projects, break the Schedule of Values into separate sections for each phase to allow independent tracking of each phase's progress. In multi building projects, break the Schedule of Values into separate sections for each building to allow independent tracking of each building's progress.
- B. Submit itemized applications typed on AIA Document G702, Application and Certificate for Payment, and continuation sheets G703.
- C. Provide itemized data on continuation sheet:
  - 1. Format, schedules, line items and values: Those of the Schedule of Values accepted by Program Manager.

**1.03 PREPARATION OF APPLICATION FOR EACH PROGRESS PAYMENT**

- A. Application Form:
  - 1. Fill in required information, including that for Change Orders executed prior to the date of submittal of application.
  - 2. Fill in summary of dollar values to agree with the respective totals indicated on the continuation sheets.
  - 3. Execute certification with the signature of a responsible officer of the Contract form.

**B. Continuation Sheets:**

1. Fill out a total list of all scheduled components of work, with item number and the scheduled dollar value for each item.
2. Fill in the dollar value in each column for each scheduled line item when work has been performed or products stored.
3. List each Change Order executed prior to the date of submission, at the end of the continuation sheets.
  - a. List by Change Order Number, and description, as for an original component item of work.

**C. Reference General Conditions for required attachments to be included with Payment Applications.****D. Submit Conditional Waivers and Release of Liens for Payments in current application and Unconditional Waiver and Release of Liens for the previous payment (including waivers from each Subcontractor who has performed work in the respective application periods) in accordance with paragraph 7.3.2 of the General Conditions.****1.04 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS****A. When the Owner, Program Manager or Architect requires substantiating data, Contractor shall submit suitable information, with a cover letter identifying:**

1. Project.
2. Application number and date.
3. Detailed list of enclosures. Provide copies of the subcontracts or other data acceptable to the Owner in order to substantiate costs.
4. For stored products:
  - a. Item number and identification as shown on application.
  - b. Description of specific material.
  - c. If materials are stored off site, the Contractor shall comply with paragraph 7.3.6.3 of the General Conditions and submit Schedule "A" for stored materials with the Application for Payment.

**B. Submit one copy of data and cover letter for each copy of application.****1.05 APPLICATION FOR PAYMENT AT A SUBSTANTIAL COMPLETION****A. Following issuance of Certificate of Submittal of Completion, submit an Application for Payment; this application shall reflect any Certificates or Partial Completion issued previously for Owner occupancy of designated portions of the Work.**

- B. Administrative actions and submittals that shall precede or coincide with this application include:

- Record Drawings (Draft)
- Occupancy Permits and similar approvals
- Warranties (guarantees) and maintenance agreements
- Test / Adjust / Balance records
- Maintenance Instructions
- Meter Readings
- Start-up Performance Reports
- Change-over information related to Owner's occupancy, use, Operation and Maintenance
- Final Cleaning
- Application of reduction of retainage, and consent of surety
- Advice on shifting insurance coverages
- List of incomplete work, recognized as exceptions to Architect's Certificate of Substantial Completion

#### **1.06 FINAL ADJUSTMENT OF ACCOUNTS**

- A. Fill in application form as specified for progress payments.
- B. Use continuation sheet for presenting the final statement of accounting.
- C. Administrative actions and submittals which must precede or coincide with submittal of the final payment Application for Payment include the following:

- Record Drawings (Final)
- Completion of Project closeout requirements
- Completion of items specified for completion after Substantial Completion
- Assurance that unsettled claims will be settled
- Assurance that Work not complete and accepted will be completed without undue delay
- Transmittal of required Project construction records to Owner
- Certified property survey
- Proof that taxes, fees, and similar obligations have been paid
- Removal of temporary facilities and services
- Removal of surplus materials, rubbish and similar elements
- Change of door locks to Owner's Access

- D. Reference General Conditions for the approval procedure of final payment.

#### **1.07 SUBMITTAL PROCEDURE**

- A. Submit Applications for Payment to Program Manager at time stipulated in the Agreement.
- B. Number: Three (3) copies of each application.

#### **PART 2 - PRODUCTS (NOT USED)**

#### **PART 3 - EXECUTION (NOT USED)**

**END OF SECTION**

DOCUMENT 01 31 19

**PROJECT MEETINGS**

**PART I – GENERAL**

**1.01 SECTION INCLUDES:**

- A. This Section specifies administrative and procedural requirements for project meetings including but not limited to:
  - 1. Pre-Construction Conference.
  - 2. Progress Meetings.
  - 3. Pre-Installation Conferences.

**1.02 PRE-CONSTRUCTION CONFERENCE – Program Manager’s Responsibilities**

- A. Schedule at a time convenient to all parties but no later than 15 days after the execution of the agreement and prior to the commencement of construction activities.
- B. Location: At the Program Manager’s office or other central site, convenient for all parties, as designated by the Program Manager.
- C. Attendees
  - 1. Owner’s representative.
  - 2. Program Manager.
  - 3. Architect and Architect’s professional consultants.
  - 4. Contractor and Contractor’s Superintendent.
  - 5. Major subcontractors.
  - 6. Major manufacturers and suppliers (if applicable).
  - 7. Others as appropriate.
  - 8. Other administrative items as appropriate.

**1.03 PROGRESS MEETINGS – Program Manager’s Responsibilities**

- A. Program Manager shall conduct progress meetings at dates and times scheduled at pre-construction meeting unless changes are agreed to by all parties and appropriate notification of such changes has been given.
- B. Conduct meetings weekly or as required by the progress of the work.

C. Location of Meetings: Program Manager's project field office or as determined by all parties.

D. Attendees:

1. Contractor's Superintendent.
2. Architect and Architect's professional consultants as needed.
3. Subcontractors as appropriate to the agenda.
4. Suppliers as appropriate to the agenda.
5. Owner's Representative.
6. Program Manager.
7. Others as appropriate.

**1.04 PRE-INSTALLATION CONFERENCES – Contractor's Responsibilities**

- A. Conduct pre-installation conference at the project site before each construction activity requiring coordination with other construction.
- B. Conduct pre-installation conference at the project site before each construction activity required by specifications to have a pre-installation conference.
- C. Attendees: Contractor's superintendent, the Installer and representatives of manufactures and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow.
- D. Advise the Architect and Program Manager of scheduled meeting dates at least 72 hours in advance.
- E. Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for:

- Contract Documents
- Options
- Related Change Orders
- Purchases
- Deliveries
- Shop Drawings, Product Data and quality control Samples
- Possible Conflicts
- Compatibility Conflicts
- Time Schedules
- Weather Limitations
- Manufacturer's Recommendations
- Warranty Requirements
- Compatibility of Materials
- Acceptability of Substrates
- Temporary Facilities
- Space and Access Limitations
- Governing Regulations



Safety  
Inspection and Testing Requirements  
Required Performance Results  
Recording Requirements  
Protection

- F. Revise construction schedule after each conference where revisions to the schedule have been made, recognized and agreed to.
- G. Record significant discussions and agreements and disagreements of each conference, along with approved schedule. Distribute minutes of meeting to everyone concerned, including Owner and Architect.
- H. Do not proceed with installation if conference cannot be successfully concluded. Initiate necessary actions to resolve impediments to performance of Work and reconvene conference at earliest feasible date.

**1.05 MEP COORDINATION MEETINGS**

- A. To be held by the Contractor as necessary to maintain work flow and adherence to contractor's schedule.

**1.06 OTHER COORDINATION MEETINGS**

- A. Owner Furnished, Owner Installed Turf – Contractor shall be responsible for scheduling a coordination meeting with the installing contractor of Owner Furnished, Owner Installed synthetic turf Contractor. Provide a minimum of 3 days notice prior to the placement of the final lift to the permeable base stone for soccer/lacrosse field, futsal and P.E. courtyards.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

END OF DOCUMENT

DOCUMENT 01 32 00

**PROJECT CONSTRUCTION SCHEDULE**

**PART I – 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 being awarded the Contract 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:

<u>ACTIVITY DESCRIPTION</u>	<u>REQUIRED COMPLETION</u>
<b>CONSTRUCTION STARTS</b>	<b>August 28, 2017</b>
<b>FINAL PROJECT COMPLETION</b>	<b>October 27, 2017</b>

**1.04 QUALIFICATIONS**

- A. Contractor shall employ experienced scheduling personnel qualified to use the latest version of Primavera Project Planner. Experience level required is set forth below. Contractor may employ such personnel directly or may employ a consultant for this purpose.
  - (1) The written statement shall identify the individual who will perform CPM scheduling.
  - (2) Capability and experience shall be verified by description of construction projects on which individual has successfully applied computerized CPM.
  - (3) Required level of experience shall include at least two (2) projects of similar nature and scope with value not less than three-fourths (¾) of the Total Bid Price of this Project. The written statement shall provide contact persons for referenced projects with current telephone and address information.
- B. District reserves the right to approve or reject Contractor’s scheduler or consultant at any time. District reserves the right to refuse replacing 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 earlier completion date than the Contract Time.
  - (2) Contractor shall not be entitled to extra compensation in event agreement is reached on an early completion schedule and Contractor completes its Work, for whatever reason, beyond completion date shown in its early completion schedule but within the Contract Time.

- (3) A schedule showing the work completed in less than the Contract Time, and that has been accepted by District, shall be considered to have Project Float. The Project Float is the time between the scheduled completion of the work and the Completion Date. Project Float is a resource available to both District and the Contractor.
- C. Ownership Project Float: Neither the District nor Contractor owns Project Float. The Project owns the Project Float. As such, liability for delay of the Completion Date rests with the party whose actions, last in time, actually cause delay to the Completion Date.
- (1) For example, if Party A uses some, but not all of the Project Float and Party B later uses remainder of the Project Float as well as additional time beyond the Project Float, Party B shall be liable for the time that represents a delay to the Completion Date.
  - (2) Party A would not be responsible for the time since it did not consume the entire Project Float and additional Project Float remained; therefore, the Completion Date was unaffected by Party A.
- D. Progress Schedule shall be the basis for evaluating job progress, payment requests, and time extension requests. Responsibility for developing Contract CPM Schedule and monitoring actual progress as compared to Progress Schedule rests with Contractor.
- E. Failure of Progress Schedule to include any element of the Work, or any inaccuracy in Progress Schedule, will not relieve Contractor from responsibility for accomplishing the Work in accordance with the Contract. District's acceptance of schedule shall be for its use in monitoring and evaluating job progress, payment requests, and time extension requests and shall not, in any manner, impose a duty of care upon District, or act to relieve Contractor of its responsibility for means and methods of construction.
- F. Software: Use District 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 or thumb drive 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 (25<sup>th</sup>) 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 IMPACTS 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 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 manhours 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

## DOCUMENT 01 33 00

**SUBMITTALS****PART 1 - GENERAL****1.01 RELATED DOCUMENTS AND PROVISIONS:**

All Contract Documents should be reviewed for applicable provisions related to the provisions in this document, including without limitation:

- A. General Conditions, including, without limitation, Contractor's Submittals and Schedules, Drawings and Specifications;
- B. Special Conditions.

**1.02 SECTION INCLUDES:**

- A. Definitions:
  - (1) Shop Drawings and Product Data are as indicated in the General Conditions and include, but are not limited to, fabrication, erection, layout and setting drawings, formwork and falsework drawings, manufacturers' standard drawings, descriptive literature, catalogues, brochures, performance and test data, wiring and control diagrams. In addition, there are other drawings and descriptive data pertaining to materials, equipment, piping, duct and conduit systems, and methods of construction as may be required to show that the materials, equipment or systems and all positions conform to the requirement of the Contract Documents, including, without limitation, the Drawings.
  - (2) "Manufactured" applies to standard units usually mass-produced; "fabricated" means specifically assembled or made out of selected materials to meet design requirements. Shop Drawings shall establish the actual detail of manufactured or fabricated items, indicated proper relation to adjoining work and amplify design details of mechanical and electrical equipment in proper relation to physical spaces in the structure.
  - (3) Manufacturer's Instructions: Where any item of Work is required by the Contract Documents to be furnished, installed, or performed, at a minimum, in accordance with a specified product manufacturer's instructions, the Contractor shall procure and distribute copies of these to the District, the Architect, and all other concerned parties and shall furnish, install, or perform the work, at a minimum, in accordance with those instructions.
- B. Samples, Shop Drawings, Product Data, and other items as specified, in accordance with the following requirements:



- (1) Contractor shall submit all Shop Drawings, Product Data, and Samples to the District, the Architect, the Project Inspector, and the Construction Manager.
- (2) Contractor shall comply with all time frames herein and in the General Conditions and, in any case, shall submit required information in sufficient time to permit proper consideration and action before ordering any materials or items represented by such Shop Drawings, Product Data, and/or Samples.
- (3) Contractor shall comply with all time frames herein and in the General Conditions and, in any case, 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. In event of any variance, Contractor shall specifically state in transmittal and on Shop Drawings, portions vary and require approval of a substitute. Also certify that Contractor-furnished equipment can be installed in allocated space.
- (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 its 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 "revised 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.

### **1.03 SHOP DRAWINGS:**

- A. Contractor shall submit one reproducible transparency and four (4) opaque reproductions or one (1) electronic in pdf or CAD. The District will review and return the reproducible copy and one (1) opaque reproduction to Contractor or electronically.
- 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 accuracy, proper fitting, construction of Work, furnishing of materials, or Work required by Contract Documents and not indicated on Shop Drawings. Shop Drawing reviewed by District and/or Architect 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.

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- 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) Architect's name and project number.
  - (3) Shop Drawing title, number, date, and scale.
  - (4) Names of Contractor, Subcontractor(s) and fabricator.
  - (5) Working and erection dimensions.
  - (6) Arrangements and sectional views.
  - (7) Necessary details, including complete information for making connections with other Work.
  - (8) Kinds of materials and finishes.
  - (9) 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 four (4) each reproduction copies or electronic pdf format via email or thumb drive, 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 four (4) reproduction copies or electronic pdf format files 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.

#### **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.
- 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

DOCUMENT 01 35 13.23

**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. Sex Offender Registration Act Certification;
- F. Temporary Facilities and Controls.

**1.02 REQUIREMENTS OF THE DISTRICT:**

- A. Drug and Alcohol-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, faculty, 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, parking lots and vehicles owned by others while on District property. Contractor shall be post: "Non-Smoking Area" in a highly visible location on Site. 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: Unacceptable and/or loud language will not be tolerated, "Cat calls" or other derogatory language toward students 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 Construction/Project Site, except for handheld communication radios (e.g., Nextel phones or radios).
  - (3) If portable lights are used after dark, all light must be located so as not to direct light into neighboring property.
  - (4) Work hours and deliveries shall be from 7:00a.m. to 7:00p.m..
- 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 Project 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 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

DOCUMENT 01 41 00

**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 and Licenses and Work to Comply with All Applicable Regulations;
- B. Special Conditions;
- 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 of 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").
- 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 (DSA), 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) Verified reports per Section 4-365 & 4-343(c).
  - (4) Duties of the Architect & Engineers shall be per Section 4-333(a) and 4-341.

- (5) Duties of the Contractor shall be per Section 4-343.
- (6) Addenda and Change Orders per Section 4-338.

Contractor shall keep and make available a copy of Part 1 and 2 of the most current version of Title 24 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) Building Standards Administrative Code, Part 1, Title 24, CCR
  - (2) California Building Code (CBC), Part 2, Title 24, CCR; (Uniform Building code volumes 1-3 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; (Fire Plumbing Code and California Amendments).
  - (7) California Referenced Standards Code, Part 12, Title 24, CCR.
  - (8) State Fire Marshal Regulations, Public Safety, Title 19, CCR.
  - (9) Partial List of Applicable 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.
  - (10) California Division of the State Architect interpretation of Regulations.

**PART 2 – PRODUCTS** Not Used.

**PART 3 – EXECUTION** Not Used.

END OF DOCUMENT

DOCUMENT 01 42 13

**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	Aluminum Association
2.	AAMA	Architectural Aluminum Manufacturers Association
3.	AASHTO	American Association of State Highway and Transportation Officials
4.	ABPA	Acoustical and Board Products Association
5.	ACI	American Concrete Institute
6.	AGA	American Gas Association
7.	AGC	Associated General Contractors
8.	AHC	Architectural Hardware Consultant
9.	AI	Asphalt Institute
10.	AIA	American Institute of Architects
11.	AIEE	American Institute of Electrical Engineers
12.	AISC	American Institute of Steel Construction
13.	AISI	American Iron and Steel Institute
14.	AMCA	Air Moving and Conditioning Association
15.	ANSI	American National Standards Institute
16.	APA	American Plywood Association
17.	ARI	Air Conditioning and Refrigeration Institute
18.	ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
19.	ASME	American Society of Mechanical Engineers
20.	ASSE	American Society of Structural Engineers
21.	ASTM	American Society of Testing and Materials
22.	AWPB	American Wood Preservers Bureau
23.	AWPI	American Wood preservers Institute
24.	AWS	American Welding Society
25.	AWSC	American Welding Society Code
26.	AWI	Architectural Woodwork Institute

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27.	AWWA	American Water Works Association
28.	BIA	Brick Institute of America
29.	CCR	California Code of Regulations
30.	CLFMI	Chain Link Fence Manufacturers Institute
31.	CMG	California Masonry Guild
32.	CRA	California Redwood Association
33.	CRSI	Concrete Reinforcing Steel Institute
34.	CS	Commercial Standards
35.	CSI	Construction Specifications Institute
36.	CTI	Cooling Tower Institute
37.	FGMA	Flat Glass Manufacturer's Association
38.	FIA	Factory Insurance Association
39.	FM	Factory Mutual
40.	FS	Federal Specification
41.	FTI	Facing Title Institute
42.	GA	Gypsum Association
43.	ICC	International Code Council
44.	IEEE	Institute of Electrical and Electronic Engineers
45.	IES	Illumination Engineering Society
46.	LIA	Lead Industries Association
47.	MIA	Marble Institute of America
48.	MLMA	Metal Lath Manufacturers Association
49.	MS	Military Specifications
50.	NAAMM	National Association of Architectural Metal Manufacturers
51.	NBHA	National Builders Hardware Association
52.	NBFU	National Board of Fire Underwriters
53.	NBS	National Bureau of Standards
54.	NCMA	National Concrete Masonry Association
55.	NEC	National Electrical Code
56.	NEMA	National Electrical Manufacturers Association
57.	NFPA	National Fire Protection Association/National Forest Products Association
58.	NMWIA	National Mineral Wool Insulation Association
59.	NTMA	National Terrazzo and Mosaic Association
60.	NWMA	National Woodwork Manufacturer's Association
61.	ORS	Office of Regulatory Services (California)
62.	OSHA	Occupational Safety and Health Act
63.	PCI	Precast Concrete Institute
64.	PCA	Portland Cement Association
65.	PDCA	Painting and Decorating Contractors of America
66.	PDI	Plumbing Drainage Institute
67.	PEI	Porcelain Enamel Institute
68.	PG&E	Pacific Gas & Electric Company
69.	PS	Product Standards
70.	SDI	Steel Door Institute; Steel Deck Institute
71.	SJI	Steel Joist Institute
72.	SSPC	Steel Structures Painting Council
73.	TCA	Tile Council of America
74.	TPI	Truss Plate Institute
75.	UBC	Uniform Building Code

76.	UL	Underwriters Laboratories Code
77.	UMC	Uniform Mechanical Code
78.	USDA	United States Department of Agriculture
79.	VI	Vermiculite Institute
80.	WCLA	West Coast Lumberman's Association
81.	WCLB	West Coast Lumber Bureau
82.	WEUSER	Western Electric Utilities Service Engineering Requirements
83.	WIC	Woodwork Institute of California
84.	WPOA	Western Plumbing Officials Association

**PART 2 - PRODUCTS** Not Used.

**PART 3 - EXECUTION** Not Used.

END OF DOCUMENT

## DOCUMENT 01 42 19

**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	Aluminum Association 1525 Wilson Blvd., Suite 600 Arlington, VA 22209 www.aluminum.org	703/358-2960
AABC	Associated Air Balance Council 1518 K Street, NW, Suite 503 Washington, DC 20005 www.aabchq.com	202/737-0202
AAMA	American Architectural Manufacturers Association 1827 Walden Office Sq., Suite 550 Schaumburg, IL 60173-4268 www.aamanet.org	847/303-5664
AASHTO	American Association of State Highway and Transportation Officials 444 N Capitol St. NW - Suite 249 Washington, DC 20001 www.transportation.org	202/624-5800
AATCC	American Association of Textile Chemists and Colorists P.O. Box 12215 One Davis Drive Research Triangle Park, NC 27709 2215 www.aatcc.org	919/549-8141
ACA	American Coatings Association 1500 Rhode Island Ave., NW Washington DC, 20005 www.paint.org	202/462-6272



ACI	American Concrete Institute 38800 Country Club Dr. Farmington Hills, MI 48331-3439 www.aci-int.org	248/848-3700
ADC	Air Diffusion Council 1901 N. Roselle Road, Suite 800 Schaumburg, Illinois 60195 www.flexibleduct.org	847/706-6750
AF&PA	American Forest and Paper Association 1111 Nineteenth Street, NW, Suite 800 Washington, DC 20036 www.afandpa.org	202/463-2700
AGA	American Gas Association 400 North Capitol Street, NW Washington, DC 20001 www.aga.org	202/824-7000
AGC	Associate General Contractors of America 2300 Wilson Blvd., Suite 400 Arlington, VA 22201 www.agc.org	703/548-3118
AHA	American Hardboard Association 1210 West Northwest Highway Palatine, IL 60067 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 One East Wacker Drive Suite 700 Chicago, IL 60601-1802 www.aisc.org	312.670.2400
AIA	American Insurance Association (formerly the National Board of Fire Underwriters) 2101 L Street, NW, Suite 400 Washington, DC 20037 www.aiadc.org	202/828-7100
AISI	American Iron and Steel Institute 25 Massachusetts Ave., NW, Suite 800	202/452.7100

	Washington, DC 20001 www.steel.org	
AITC	American Institute of Timber Construction 7012 S. Revere Parkway Suite 140 Centennial, CO 80112 www.aitc-glulam.org	303/792.9559
ALI	Associated Laboratories, Inc. P.O. Box 152837 Dallas, TX 75315 www.assoc-labs.com	214/565-0593
ALSC	American Lumber Standards Committee, Inc. P.O. Box 210 Germantown, MD 20875 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
ANLA	American Nursery & Landscape Association 1200 G Street NW, Suite 800 Washington, DC 20005 www.anla.org	202/789-2900
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 6710 Winkler Road, Suite 8 Fort Myers, Florida 33919 www.archprecast.org	239/454-6989
ARI	Air Conditioning and Refrigeration Institute 4100 N. Fairfax Drive, Suite 200 Arlington, VA 22203 www.lightindustries.com/ARI	703/524-8800
ARMA	Asphalt Roofing Manufacturers Association Public Information Department 750 National Press Building 529 14th Street, NW Washington, DC 20045	202/591-2450

	<a href="http://www.asphaltroofing.org">www.asphaltroofing.org</a>	
ASA	The Acoustical Society of America ASA Office Manager Suite 1N01 2 Huntington Quadrangle Melville, NY 11747-4502 <a href="http://asa.aip.org">http://asa.aip.org</a>	516/576-2360
ASCE	American Society of Civil Engineers 1801 Alexander Bell Drive Reston, VA 20191 <a href="http://www.asce.org">www.asce.org</a>	800/548-2723 703/295-6300
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers 1791 Tullie Circle, NE Atlanta, GA 30329-2305 <a href="http://www.ashrae.org">www.ashrae.org</a>	800/527-4723 404/636-8400
ASLA	American Society of Landscape Architects 636 Eye Street, NW Washington, DC 20001-3736 <a href="http://www.asla.org">www.asla.org</a>	202/898-2444
ASME	American Society of Mechanical Engineers Three Park Avenue New York, NY 10016-5990 <a href="http://www.asme.org">www.asme.org</a>	800/434-2763
ASPE	American Society of Plumbing Engineers 2980 S River Rd. Des Plaines, IL 60018 <a href="http://aspe.org">http://aspe.org</a>	847/296-0002
ASQ	American Society for Quality P.O. Box 3005 Milwaukee, WI 53201-3005 or 600 North Plankinton Avenue Milwaukee, WI 53203 <a href="http://asq.org">http://asq.org</a>	800/248-1946 414/272-8575
ASSE	American Society of Sanitary Engineering 901 Canterbury, Suite A Westlake, Ohio 44145 <a href="http://www.asse-plumbing.org">www.asse-plumbing.org</a>	440/835-3040
ASTM	ASTM International 100 Barr Harbor Drive PO Box C700 West Conshohocken, PA, 19428-2959 <a href="http://www.astm.org">www.astm.org</a>	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 P.O. Box 361784 Birmingham, AL 35236-1784 www.awpa.com	205/733-4077
AWPI	American Wood Preservers Institute 2750 Prosperity Ave. Suite 550 Fairfax, VA 22031-4312 www.arcat.com	800/356-AWPI 703/204-0500
AWS	American Welding Society 8669 Doral Boulevard, Suite 130 Doral, Florida 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 1850 Centennial Park Drive, Suite 301 Reston, VA 20191 www.gobrick.com	703/620-0010
CGA	Compressed Gas Association 14501 George Carter Way, Suite 103 Chantilly VA 20151-2923 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 1064 Delaware Avenue SE	404/622-0073

	Atlanta, GA 30316 www.cispi.org	
CLFMI	Chain Link Fence Manufacturers Institute 10015 Old Columbia Road, Suite B-215 Columbia, MD 21046 www.associationsites.com/main-pub.cfm?usr=clfma	410/290-6267
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	301/504-7923 800/638-2772
CRA	California Redwood Association 405 Enfrente Drive, Suite 200 Novato, CA 94949 www.calredwood.org	415/382-0662
CRI	Carpet and Rug Institute P.O. Box 2048 Dalton, Georgia 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 110 South Union Street, Suite 100 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
DHI	Door and Hardware Institute (formerly National Builders Hardware Association) 14150 Newbrook Dr. Chantilly, VA 20151 www.dhi.org	703/222-2010
DIPRA	Ductile Iron Pipe Research Association 2000 2nd Avenue, South Suite 429 Birmingham, AL 35233	205/402-8700

	www.dipra.org	
DOC	U.S. Department of Commerce 1401 Constitution Ave., NW Washington, D.C. 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 7439 Millwood Drive West Bloomfield, MI 48322 www.fcica.com	248/661-5015 877/TO-FCICA
FM Global	Factory Mutual Insurance Company Mary Breighner Global Practice Leader Education, Public Entities, Health Care FM Global 9 Woodcrest Court Cincinnati, OH 45246 www.fmglobal.com	513/742-9516
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 6525 Belcrest Road, Suite 480 Hyattsville, MD 20782 www.gypsum.org	301/277-8686
GANA	Glass Association of North America 800 SW Jackson St., Suite 1500 Topeka, KS 66612-1200 www.glasswebsite.com	785/271-0208

HMA	Hardwood Manufacturers Association 665 Rodi Road, Suite 305 Pittsburgh, PA 15235 <a href="http://hmamembers.org">http://hmamembers.org</a>	412/244-0440
HPVA	Hardwood Plywood & Veneer Association 1825 Michael Faraday Drive Reston, Virginia 20190 <a href="http://www.hpva.org">www.hpva.org</a>	703/435-2900
IAPMO	International Association of Plumbing and Mechanical Officials (formerly the Western Plumbing Officials Association) 4755 E. Philadelphia St. Ontario, CA 91761 <a href="http://www.iapmo.org">www.iapmo.org</a>	909/472-4100
ICC	International Code Council 500 New Jersey Avenue, NW, 6th Floor Washington, DC 20001 <a href="http://www.iccsafe.org">www.iccsafe.org</a>	888/422-7233
IEEE	Institute of Electrical and Electronics Engineers 3 Park Avenue, 17th Floor New York, NY 10016-5997 <a href="http://www.ieee.org">www.ieee.org</a>	212/419-7900
IES	Illuminating Engineering Society 120 Wall Street, Floor 17 New York, NY 10005-4001 <a href="http://www.ies.org">www.ies.org</a>	212/248-5000
ITRK	Intertek Testing Services 3933 US Route 11 Cortland, NY 13045 <a href="http://www.intertek.com">www.intertek.com</a>	607/753-6711
MCAA	Mechanical Contractors Association of America 1385 Piccard Drive Rockville, MD 20850 <a href="http://www.mcaa.org">www.mcaa.org</a>	301/869-5800
MIA	Marble Institute of America 28901 Clemens Rd, Ste 100 Cleveland, OH 44145 <a href="http://www.marble-institute.com">www.marble-institute.com</a>	440/250-9222
MMPA (formerly WMMPA)	Moulding & Millwork Producers Association (formerly Wood Moulding & Millwork Producers Association) 507 First Street Woodland, CA 95695	530/661-9591 800/550-7889

	<a href="http://www.wmmpa.com">www.wmmpa.com</a>	
MSS	Manufacturers Standardization Society (MSS) of the Valve and Fittings Industry 127 Park Street, NE Vienna, VA 22180-4602 <a href="http://mss-hq.org">http://mss-hq.org</a>	703/281-6613
NAAMM	National Association of Architectural Metal Manufacturers 800 Roosevelt Rd. Bldg. C, Suite 312 Glen Ellyn, IL 60137 <a href="http://www.naamm.org">www.naamm.org</a>	630/942-6591
NAIMA	North American Insulation Manufacturers Association 44 Canal Center Plaza, Suite 310 Alexandria, VA 22314 <a href="http://www.naima.org">www.naima.org</a>	703/684-0084
NAPA	National Asphalt Pavement Association 5100 Forbes Blvd. Lanham, MD USA 20706-4407 <a href="http://www.asphaltpavement.org">www.asphaltpavement.org</a>	888/468-6499 301/731-4748
NCSPA	National Corrugated Steel Pipe Association 14070 Proton Road, Suite 100 LB9 Dallas, TX 75244 <a href="http://www.ncspa.org">www.ncspa.org</a>	972/850-1907
NCMA	National Concrete Masonry Association 13750 Sunrise Valley Drive Herndon, VA 20171-4662 <a href="http://www.ncma.org">www.ncma.org</a>	703/713-1900
NEBB	National Environmental Balancing Bureau 8575 Grovemont Circle Gaithersburg, MD 20877 <a href="http://www.nebb.org">www.nebb.org</a>	301/977-3698
NECA	National Electrical Contractors Association 3 Bethesda Metro Center, Suite 1100 Bethesda, MD 20814 <a href="http://www.necanet.org">www.necanet.org</a>	301/657-3110
	National Electrical Manufacturers Association 1300 North 17th Street, Suite 1752 Rosslyn, Virginia 22209 <a href="http://www.nema.org">www.nema.org</a>	703/841-3200



NEII	National Elevator Industry, Inc. 1677 County Route 64 P.O. Box 838 Salem, New York 12865-0838 www.neii.org	518/854-3100
NFPA	National Fire Protection Association 1 Batterymarch Park Quincy, Massachusetts USA 02169-7471 www.nfpa.org	617/770-3000
NHLA	National Hardwood Lumber Association PO Box 34518 Memphis, TN 38184 www.nhla.com	901/377-1818
NIA	National Insulation Association 12100 Sunset Hills Road, Suite 330 Reston, VA 20190 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 P.O. Box 130140 789 N. Dixboro Road Ann Arbor, MI 48113-0140, USA www.nsf.org	800/673-6275 734/769-8010
NTMA	National Terrazzo and Mosaic Association 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, D.C. 20210 www.osha.gov	800/321-OSHA (6742)
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 60077 or 500 New Jersey Ave., N.W. 7 <sup>th</sup> Floor Washington, D.C. 20001 www.cement.org	847/966-6200 202/408-9494
PCI	Precast/Prestressed Concrete Institute	312/786-0300

	200 W. Adams St. #2100 Chicago, IL 60606 www.pci.org	
PDCA	Painting and Decorating Contractors of America 2316 Millpark Drive, Ste 220 Maryland Heights, MO 63043 www.pdca.com	800/332-PDCA (7322) 314/514-7322
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 www.pge.com	800/743-5000
PLANET	Professional Landcare Network 950 Herndon Parkway, Suite 450 Herndon, Virginia 20170 www.landcarenetwork.org	703/736-9666 800/395-2522 703/736-9668
RFCI	Resilient Floor Covering Institute 115 Broad Street, Suite 201 La Grange GA 30240 www.rfci.com	706/882-3833
RIS	Redwood Inspection Service 818 Grayson Road, Suite 201 Pleasant Hill, CA 94523 www.redwoodinspection.com	925/935-1499
SDI	Steel Deck Institute P.O. Box 25 Fox River Grove, IL 60021 www.sdi.org	847/458-4647
SDI	Steel Door Institute 30200 Detroit Road Westlake, Ohio 44145 www.steeldoor.org	440/899-0010
SJI	Steel Joist Institute 234 W. Cheves Street Florence, SC 29501 http://steeljoist.org	843/407-4091
SMA	Stucco Manufacturers Association	949/387.7611

	500 East Yale Loop Irvine, CA 92614 www.stuccomfgassoc.com	
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association 4201 Lafayette Center Drive Chantilly, Virginia 20151-1219 www.smacna.org	703/803-2980
SPI	SPI: The Plastics Industry Trade Association, Inc. 1667 K St., NW, Suite 1000 Washington, DC 20006 www.plasticsindustry.org	202/974-5200
SSPC	Society for Protective Coatings (formerly the Steel Structures Painting Council) 40 24th St 6th Fl Pittsburgh, PA 15222 www.sspc.org	412/281-2331 877/281-7772
TCA	The Tile Council of North America 100 Clemson Research Blvd. Anderson, SC 29625 www.tcnatile.com	864/646-8453
TPI	Truss Plate Institute 218 North Lee Street, Suite 312 Alexandria, VA 22314 www.tpinst.org	703/683-1010
TPI	Turfgrass Producers International 2 East Main Street East Dundee, IL 60118 www.turfgrassod.org	800/405-8873 847/649-5555
TCIA	Tree Care Industry Association (formerly the National Arborist Association) 136 Harvey Road, Suite 101 Londonderry, NH 03053 www.tcia.org	800/733-2622
TVI	The Vermiculite Institute c/o The Schundler Company 150 Whitman Avenue Edison, NJ. 08817 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 2711 LBJ Freeway, Suite 1000 Dallas, TX 75234 <a href="http://www.uni-bell.org">www.uni-bell.org</a>	972/243-3902
USDA	U.S. Department of Agriculture 1400 Independence Ave., S.W. Washington, DC 20250 <a href="http://www.usda.gov">www.usda.gov</a>	202/720-2791
WA	Wallcoverings Association 401 North Michigan Avenue Suite 2200 Chicago, IL 60611 <a href="http://www.wallcoverings.org">www.wallcoverings.org</a>	312/321-5166
WCLIB	West Coast Lumber Inspection Bureau P.O. Box 23145 Portland, OR 97281 or 6980 S.W. Varns Tigard, OR 97223 <a href="http://www.wclib.org">www.wclib.org</a>	503/639-0651
WCMA	Window Covering Manufacturers Association 355 Lexington Avenue 15th Floor New York, New York 10017 <a href="http://www.wcmanet.org">www.wcmanet.org</a>	212/297-2122
WDMA	Window & Door Manufacturers Association 401 N. Michigan Avenue, Suite 2200 Chicago, IL 60611 or 2025 M Street, NW, Ste. 800 Washington, D.C. 20036-3309 <a href="http://www.wdma.com">www.wdma.com</a>	312/321-6802 202/367-1157
WI	Woodwork Institute P.O. Box 980247 West Sacramento, CA 95798 <a href="http://www.wicnet.org">www.wicnet.org</a>	916/372-9943
WRI	Wire Reinforcement Institute 942 Main Street Hartford, CT 06103 <a href="http://www.wirereinforcementinstitute.org">www.wirereinforcementinstitute.org</a>	860/240-9545
WWCA	Western Wall & Ceiling Contractors Association 1910 N. Lime St. Orange, California 92865 <a href="http://www.wwcca.org">www.wwcca.org</a>	714/221-5520
WWPA	Western Wood Products Association 522 SW Fifth Ave., Suite 500	503/224-3930

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	Portland, OR 97204-2122 www2.wwpa.org	
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**PART 2 - PRODUCTS** Not Used.

**PART 3 - EXECUTION** Not Used.

END OF DOCUMENT

DOCUMENT 01 43 00

**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. Hazardous Materials Procedures and Requirements;
- D. Imported Materials Certification;
- E. Submittals;
- F. Quality Control.

**1.02 MATERIAL AND EQUIPMENT**

- A. Only items approved by the District and/or Architect 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 be 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, 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

DOCUMENT 01 45 00

**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 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 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.

- (4) The Owner and their representatives shall at all times have access for the purpose of inspection to all parts of the work and to the shops wherein the work is in preparation, and the Contractor shall at all times maintain proper facilities and provide safe access for such inspection.
- (5) The Owner shall have the right to reject materials and workmanship which are defective, or to require their correction. Rejected workmanship shall be satisfactorily corrected and rejected materials shall be removed from the premises without charge to the Owner. If the Contractor does not correct such work within a reasonable time, fixed by written notice, the Owner may correct same and charge the expense to the Contractor.
- (6) Should it be considered necessary or advisable by the Owner at any time before final acceptance of the entire work to make an examination of work already completed by removing or tearing out the same, the Contractor shall on request promptly furnish all necessary facilities, labor and materials. If such work is found to meet the requirements of the Contract, the additional cost of labor and material necessarily involved in the examination and replacement shall be allowed by the Contractor.

#### **1.04 CONTRACTOR'S RESPONSIBILITIES:**

- A. 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.
- B. 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.
- C. 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.
- D. Cooperate with agencies performing required inspections, tests and similar services, and provide reasonable auxiliary services as required.
- E. Provide to agency, selected preliminary representative samples of materials to be tested, in required quantities or assist the agency in taking samples.
- F. Furnish casual labor and facilities:
  - 1. To provide access to the Work.
  - 2. To obtain and handle samples at the site.
  - 3. To facilitate inspections and tests.
  - 4. For agency's exclusive use for storage and curing of test samples.

- 5. To provide security and protection of samples and test equipment at the Project Site.
- G. Notify agency sufficiently in advance of operations to permit assignment of personnel and scheduling of tests.
- H. Coordination: Coordinate the sequence of activities to accommodate required services with a minimum of delay. Coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspection and tests. The Contractor is responsible for scheduling times for inspections, tests, taking samples and similar activities.

#### **1.05 TESTING AGENCIES SERVICES:**

- 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.
- D. The Testing Agency will cooperate with Architect, Inspector of Record and Contractor; provide qualified personnel promptly on notice.
- E. Promptly notify Architect, Inspector of Record and Contractor, of irregularities or deficiencies of work which are observed during performance of services.
- F. Submittals: Promptly submit copies of records of inspections and test, mill analysis, concrete mix designs and certifications per applicable sections of the specification(s).
  - 1. Comply with requirements of Division of State Architect (DSA) "Structural Tests and Inspections", DSA form DSA-103.
  - 2. One copy of all test reports shall be forwarded to the DSA by the testing agency. Such reports shall include all tests made, regardless of whether such test indicate that the material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Records of special sampling operations as required shall also be reported. The reports shall show that the materials or materials were sampled and tested in accordance with the requirements of Title 24 and the approved specifications. Test reports shall show the specified design strength. They shall also state definitely whether or not the material or materials tested comply with regulation.

3. Verification of Test Reports: Each testing agency shall submit to the DSA a verified report in duplicate covering all of the tests which are required to be made by that agency during the progress of the project. Such report shall be furnished each time that work on the project is suspended, covering the tests up to the time, and at the completion of the project, covering all tests. Comply with Title 24, Part 1.

#### **1.06 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) Test and observation of welding and expansion anchors.
- D. The District may at its discretion, pay and 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,
  - 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.

### **1.07 QUALITY MANAGEMENT**

- A. Contractor shall participate in the Quality Management Program as directed by the Program Manager and shall be responsible for maintaining an acceptable level of quality for the work. The Contractor shall submit their own Quality Management Program to the Project Manager for review.
- B. After award of the contract and prior to start of the Work, the Program Manager will schedule a meeting with the Contractor. The purpose of the meeting is to introduce the following Quality Management Program and to determine its implementation process. The following Quality In Construction (QIC) Program is a process, which works to assure the highest quality of building product, which is consistent with the requirements established for the project. During the construction phase of the project, the QIC inspection process is involved in all aspects of the building Work to assure the quality of work being provided by the Contractor(s).
  1. Coordinate Drawings – Contractors shall schedule the process of coordinating the above ceiling and mechanical space areas prior to work proceeding in the field. Formal drawings are required and each subcontractor is required to sign each drawing indicating agreement with what is shown and to use the drawings to guide the Work.
  2. First Delivery of Material/Equipment Inspection – Contractor shall inspect and document the first site delivery of each type of material and equipment against the requirements of the design documents and the approved shop drawings.
  3. First Equipment in Place Inspection – Contractor inspects and documents the first setting of the equipment against the requirements of the design documents and the approved shop drawings.
  4. Benchmark – Before start of construction of each type of work, the Contractor will review the contract documents, submittals, shop drawings, codes and reference standards to verify the requirements.

5. Mock-up – Obtain early Owner and A/E approval of the Work for aesthetic considerations, construction, function and compliance with the Contract Documents.
  6. Equipment/System Inspection and Start-Up – Contractor has completed static installation of equipment and is ready to place it in dynamic operation.
- C. The Contractor shall monitor the quality of the Work as it progresses and will report, in writing, to the Program Manager. The acceptable level of quality will be determined by the Owner, the Architect, Program Manager, the Independent Testing Laboratory, the Contract Documents, and by sample construction. All work not meeting the acceptable level of quality will be corrected at the Contractor's expense.
- D. The Program Manager reserves the right to compile a list of incomplete items and Notice to Comply logs throughout the duration of the project, which shall be transmitted to the Contractor periodically. The Contractor shall address those items within a reasonable time frame from the date transmitted as established by the Program Manager on a case-by-case basis.

## **PART 2 - PRODUCTS**

### **2.01 TYPE OF TEST AND INSPECTIONS:**

#### A. Concrete Tests

Testing agency shall test concrete used in the work per the following paragraphs:

- (1) Slump Test  
ASTM C 143
- (2) Compressive Strength:
  - a. Minimum number of tests required: One (1) set of five (5) cylinders for each 100 cubic yards (Sec. 2604(h) 01) of concrete or major fraction thereof, placed in one (1) day. See Title 24, Section 2605(g).
  - b. Two cylinders of each set shall be tested at seven (7), fourteen (14) and twenty-eight (28) days. Two (2) cylinder shall be held in reserve and tested only when directed by the Architect or District.
  - c. Concrete shall test the minimum ultimate compressive strength in 28 days, as specified on the structural drawings.
  - d. In the event that the twenty-eight (28) day test falls below the minimum specified strength, the effective concrete in place shall be tested by taking cores in accordance with UBC Standard No. 26-13 and tested as required for cylinders.
  - e. In the event that the test on core specimens falls below the minimum specified strength, the concrete will be deemed

defective and shall be removed and replaced upon such direction of the Architect, and in a manner acceptable to the Division of the State Architect.

- B. Reinforcing, Steel
- C. Compaction:
  - (1) Subsoil
  - (2) Sub-base Materials
- D. Post-Installed Anchors

**PART 3 - EXECUTION** Not Used.

END OF DOCUMENT



DOCUMENT 01 50 00

**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.

**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 will pay for water during the course of the Work. 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) or on the Site 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 and the District 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 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. The Contractor is responsible for providing trash bins, trash bags and/or trash containers to facilitate the removal of trash from the Site.
- (2) Contractor is not allowed to utilize the District trash bins or containers during the course of the Work.

H. Temporary Facilities:

- (1) None.

**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 workmen. 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. Temporary Fencing: Provide and maintain a temporary fence as required for safety and protection of Work and staging/staging area(s). Fencing shall be installed prior to any construction start. All temporary fencing shall be maintained in good working order. Keep fence secured at all points and gates closed at all times except as required to allow construction traffic through. Assure fences are locked at night. Provide keys to the Program Manager for all locks that secure fencing.

Construction: Provide woven wire mesh fencing, with slats or fabric, not less than 6 feet in height, complete with metal or wood posts and required bracing, and with suitably locked truck and pedestrian gates as required. Provide directional and warning signage as appropriate. Fencing shall be supported by driven posts rather than on stands unless otherwise accepted by the District. Reference the Site Utilization Plan.

Fence Stands: If use is approved by the District, they shall be protected or be highly visible and clearly marked. Fencing stands shall be adjusted daily or more, if needed as determined by the District for safety.

- D. 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.
- E. 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 Premise against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within the drip line, excess foot traffic or parking of vehicles within the drip line.
  - (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.
  - (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) Contractor shall provide 12" of mulch around the tree's dripline where the Work encroaches into the root protection zone.
- (6) 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

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 Architect; 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 Architect.

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).

**PART 2 – PRODUCTS** Not used.

**PART 3 – EXECUTION** Not used.

END OF DOCUMENT



DOCUMENT 01 50 13

**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. Document 00 72 13 General Conditions;
- B. Document 00 73 13 Special Conditions;
- C. Document 01 50 00 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 fifty percent (50%) 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 10 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. CHPS Submittal: CHPS letter template for Credit ME2.0 and ME2.1, signed by Contractor, tabulating total waste material, quantities diverted and means by which it is diverted, and statement that requirements for the credit have been met.
- I. Qualification Data: For Waste Management Coordinator.
- J. 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.
- K. Submittal procedures and quantities are specified in Document 01300.

**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 measure 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 01500 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 01500 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 SECTION

SECTION 01 66 00

**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

DOCUMENT 01 71 23

**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

## DOCUMENT 01 73 00

## SAFETY PROGRAM REQUIREMENTS

**Note:** This document is appended by all the requirements put forth in other sections of the Construction Provisions.

## Responsibilities

1. General Contractor.
  - a. Develop, implement and maintain a site-specific Safety Program for the project duration that is compliant with all site, local, state and Cal/OSHA requirements.
    - i. The General Contractor's site-specific Safety Program must be included in all sub-tier contracts.
  - b. The General Contractor shall submit the reports and documents below to the District or Program Manager for review and record:
    1. Site utilization plan and site security plan.
    2. Permits as required by Cal/OSHA for project notification and other high-hazard permit required activities (e.g. steel erection, excavation and scaffold erection).
    3. Training documents (e.g. toolbox talks, job hazard analysis, operator cards and site orientation information).
    4. Storm water protection and prevention programs and required inspections.
    5. Weekly site safety inspections by all parties.
      - a. Including also:
        - i. Daily excavation inspections.
        - ii. Daily scaffold inspections.
        - iii. Site security inspections.
        - iv. Annual crane inspections.
    6. Documented enforcement and incentive activities.
    7. The District or Program Manager reserves the right to request additional safety information pertinent to site safety not specifically included in this section.
  - c. Stop any unsafe work activities.
  - d. **Additional site requirements** – The General Contractor shall include the following requirements in their site-specific Safety Program. Any site-specific Safety Program submitted to the Construction Manager without these requirements will be rejected.
    - i. Personal protective equipment:
      1. Hard hats shall be worn at all times on the project site.
      2. Safety glasses shall be worn at all times on the project site.
      3. Appropriate hand protection shall be worn when hands are exposed to potential injury.
      4. High-visibility vests shall be worn when heavy machinery is operating on site.

5. Work boots with substantial soles shall be worn at all times.
- ii. Housekeeping:
  1. Trash, debris and scrap shall be collected **daily** and placed in the appropriate bin/receptacle/dumpster.
  2. No construction equipment, materials or wastes are allowed in any un-secured area where there is potential exposure to students, staff, faculty or administration of the District.
- iii. Qualified and experienced site safety representative:
  1. The Site Safety Representative shall be OSHA 30-hour Hazard Recognition trained.
  2. The Site Safety Representative shall have the authority to stop immediately all unsafe work activities.
- iv. Conduct weekly site safety inspections and document findings.
- v. Fall Protection.
  1. Fall protection shall be provided anywhere there is exposure to a fall of six (6) or more feet. This requirement is all-inclusive for all trades on site.
- vi. Electrical.
  1. Hot work is not allowed.
  2. Each contractor shall utilize GFCI (ground fault circuit interrupter) protection for electrical equipment and implement an assured equipment inspection program.
- vii. Prohibited items:
  1. Alcohol.
  2. Controlled substances.
  3. Knives with blades longer than two (2) inches.
  4. Pets.
  5. Smoking on campus.
- viii. Trenching and excavation.
  1. Competent person identified and on-site during trenching and excavation work.
  2. Safety considerations shall be made for workers as well as the public.
  3. Trench and excavations must be covered by the end of the day.
  4. Maintain a safe perimeter around the area of Work with the use of fencing, barricades, caution tape and other means.
- ix. Traffic and Traffic Controls.
  1. 5 MPH on parking lots and pathways.
  2. 15 MPH on secondary and service roads.
  3. Traffic control measures shall be provided for all deliveries onto campus secondary and service roads and pathways.
  4. Service and delivery trucks shall not block or hinder the use of accessible pathways.

2. District or Program Manager
  - a. Review the General Contractor's safety program for conformance to the District requirements and in general, compliance with established standards to ensure the safety of students, staff and faculty.

End of Document

DOCUMENT 01 73 29

**CUTTING AND PATCHING**

**1. 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) Affects 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 other trades 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

DOCUMENT 01 76 00

**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 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 existing 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.
- 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 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

DOCUMENT 01 77 00

**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 and Final Payment;
- 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 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 clean Site, sweep paved areas, pressure wash concrete pavement and rake clean landscaped surfaces.
- E. Contractor shall remove waste and surplus materials, rubbish, and construction facilities from the Site.
- F. Contractor shall remove temporary barricades and pedestrian protection materials from the Site and dispose of properly.
- G. Contractor shall refresh parking striping damaged during the course of the Work within the Contractor's laydown.

**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.
- 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 need for such data becomes apparent during instruction.
- E. 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.

### **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 all required Operation and Maintenance Data.

**PART 2 – PRODUCTS** Not used.

**PART 3 – EXECUTION** Not used.

END OF DOCUMENT

DOCUMENT 01 78 23

**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: The 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

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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.

## **1.08 SUBMITTAL:**

- A. Contractor shall submit to the District for review one (1) electronic pdf format 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 three (3) copies or one (1) electronic pdf format on disc or thumb drive 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 three (3) copies and one (1) electronic pdf format 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

## DOCUMENT 01 78 36

**GUARANTEES AND 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 "GUARANTEES AND 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 guarantees and 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 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, provide updated submittal within ten days after acceptance, listing the date of acceptance as start of warranty period.
- D. Contractor shall submit three (3) copies or one (1) electronic pdf format of a complete document set of special warranty and contractor guarantee in final form prior to final Application for Payment. Contractor must revise the content of the Documents as required by District prior to District's approval of Contractor's final Application for Payment.
- E. Contractor must submit three (3) copies and one (1) electronic pdf format on disc or thumb drive of revised Documents in final form within the (10) days after final inspection.

**PART 2 - PRODUCTS** Not Used.

**PART 3 – EXECUTION** Not Used.

END OF DOCUMENT

DOCUMENT 01 78 39

**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 (1) set of reproductions (opaque) plans of the original Contract Drawings.
- B. Contractor shall maintain at each Project Site one set of marked-up plans and shall transfer all changes and information to those marked-up plans, as often as required in the Contract Documents, but in no case less than once each month. Contractor shall submit to the Project Inspector one set of reproducible vellums of the Project Record Drawings ("As-Builts") showing all changes incorporated into the Work since the preceding monthly submittal. The As-Builts shall be available at the Project Site. The Contractor shall submit reproducible vellums at the conclusion of the Project following review of the blueline prints.
- C. Label and date each Record Drawing "RECORD DOCUMENT" in legibly printed letters.
- D. All deviations in construction, including but not limited to pipe and conduit locations and deviations caused by without limitation Change Orders, Field Work 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.
  - (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."

**PART 3 - RECORD SPECIFICATIONS**

**3.01 GENERAL:**

Contractor shall mark each section legibly to record manufacturer, trade name, catalog number, and supplier of each Product and item of equipment actually installed.

**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. Do not use Record Documents for construction purposes.

**PART 5 – SUBMITTAL.**

- A. Contractor shall submit one (1) reproduction opaque copy or one (1) electronic pdf format on disc or thumb drive of a complete Record Document in final form prior to final Application for Payment. Copy will be returned with Architect/Engineer comments. Contractor must revise the content of the Record Document as required by District prior to District's approval of Contractor's final Application for Payment.
- B. Contractor must submit one (1) reproduction opaque copy and one (1) electronic pdf format on disc or thumb drive of revised Record Document in final form within ten (10) days after final inspection.

END OF DOCUMENT

**END OF DOCUMENTS  
FOR  
PROJECT MANUAL**

# **SPECIFICATION SECTIONS FOR PROJECT MANUAL**

SECTION 01 07 00

**CONFORMANCE SURVEYING**

**PART 1 GENERAL**

1.01 SUMMARY

- A. Conformance Surveying work shall be completed by a Licensed Surveyor and be based on established site bench marks, monuments, lines, and levels necessary for the work covered by this Contract.
- B. Scope of work:  
Providing conformance surveying required for proper completion of the work may include, but may not be limited to:
  - 1. Synthetic turf construction, including subgrade and base preparation.
  - 2. Running track construction, including track paving, track surfacing, and all track edges / curbing.
  - 3. Tennis court construction, including all curbing / edgebands.
- C. Related sections can include, but may not be limited to the following:
  - 1. Section 31 20 00 – Earthwork
  - 2. Section 32 11 00 – Base Courses
  - 3. Section 32 12 16 – Asphaltic Concrete Paving
  - 4. Section 32 18 30 – Tennis Court Surfacing
  - 5. Section 32 18 13 – Synthetic Turf
  - 6. Section 32 18 24 – Track Surfacing
  - 7. Section 32 90 00 – Landscaping

1.02 SUBMITTALS

- A. Contractor will be required to submit three (3) hard copies and one (1) electronic copy (in AutoCAD or scaled PDF image) of all conformance surveys for the project. The Contractor shall ensure that all survey data is completed with the supervision of a licensed surveyor. The Owner Representative shall provide a written response within two (2) working days of receipt of said drawings and identify any areas out of tolerance.

1.03 QUALITY CONTROL AND REWORK

- A. Any portion of the survey that does not conform to the grading tolerance requirements identified in this specification section will be corrected by the Contractor. Areas out of conformance will be resurveyed at the Contractor's sole expense (following the identical procedure stated above) by the Surveyor, and these revised points shall be added to the original digital file for resubmittal, review and acceptance by the Owner Representative.
- B. All delays and costs incurred due to grades out of conformance are the sole responsibility of the Contractor. At any point during construction following acceptance of any portion of the survey by the Owner, the Owner reserves the right to recheck the surface grades (at no cost to the Contractor) to verify it is still in conformance. It is the Contractor's responsibility to protect the grading and compaction tolerances of the surveyed surface after conformance surveying operations are complete and accepted, and prior to installation of any subsequent materials. Any work identified by the survey that is outside of the acceptable tolerances shall be corrected by the Contractor at its sole expense.

**PART 2 PRODUCTS - Not Applicable**

## **PART 3 EXECUTION**

### **3.01 LAYING OUT THE WORK**

- A. Contractor shall employ a Registered Civil Engineer or Licensed Land Surveyor (hereafter referred to as Surveyor) to perform any conformance surveying work required by the Contractor.
- B. Prior to beginning work, Contractor shall secure the electronic grading plan from the Owner for use by the Surveyor. The surveyor shall provide all conformance survey drawings. The drawings shall provide both the design elevations and the as-constructed spot elevations. These elevations shall be for comparison to those on the contract documents for the same location. Contractor shall also show the difference in these two numbers. In addition, unique reference numbers shall be assigned to each point for reference purposes. For spacing requirements, refer to specific type of improvement identified in this specification section.
- C. Accuracy of all surveys provided in this section shall be to 0.01 feet.
- D. The surveyor shall provide all conformance survey drawings and all 25' grid or other grid conformance grades based on the grading plans designed grades.

### **3.02 SYNTHETIC TURF SUBGRADE AND BASE CONFORMANCE SURVEYING**

- A. Contractor shall verify that subgrade has been prepared according to specifications with regard to compaction, grade tolerances and is free of debris, non-compactable material, topsoil, or organics prior to beginning work.
- B. Prior to acceptance of the subgrade, a conformance survey will be prepared by the Contractor and a digital file submitted to the Owner Representative. The Contractor will be responsible to provide a certified conformance survey prepared by a Licensed Surveyor. The survey shall be based on a 25 foot grid showing the field crown, the center of the subgrade elevation of the subdrain trench edges, perimeter of the field at edge finish grade and curb finish surface. The plan shall show the comparison of the design grades versus the as-constructed grades.
- C. Top of subgrade elevations shall be verified using laser-operation survey instruments. Grades at each point must be within 1/2 -inch plus or minus from the elevations shown on the plans. In addition, no two adjacent points within the grid shall cumulatively deviate more than 3/4-inch (0.06 feet) from the respective points' design grades.
- D. The top of permeable rock base elevations shall not vary from the specified grades more than one-quarter of one inch (1/4", or 0.02 ft.) at any location when measured in any direction.
- E. Prior to acceptance of the permeable rock base, a conformance survey will be prepared by the Contractor. The Contractor will be responsible to provide a certified, digital, conformance survey prepared by a Licensed Surveyor. The survey shall be based on a 25 foot grid showing the field crown, perimeter of the field and adjacent curb edge. The plan shall show the comparison of the design grades versus the as-constructed grades. Any portion of the survey that does not conform to the requirements identified above will be corrected by the Contractor. Areas out of conformance will be resurveyed (following the identical procedure stated above) by the Surveyor, and these revised points shall be added to the original digital file for review and acceptance by the Owner's Representative. All delays and costs incurred due to grades out of conformance are the sole responsibility of the Contractor. It is the Contractor's responsibility to protect the grading and compaction tolerances of the base after conformance survey is complete and prior to installation of the synthetic turf.

- F. Finish surface planarity shall be verified, and if necessary adjusted, by the Contractor using string line method. A mason's line held taught between two workman separated by a distance of approximately 40 feet, shall be placed directly on the finished surface, parallel to the direction of greatest slope. A third workman shall check for separations between the mason's line and the finished surface that are equal to or greater than the specified tolerances. Areas of separation shall be outlined with marking paint and the depth of separation indicated. No deviation on the string shall be greater than one-half inch (0.04 feet).
- G. Entire finished surface shall be "walked" with mason's line in increments of approximately 3 feet.

### 3.03 TRACK SURFACE TOLERANCES AND CONFORMANCE SURVEYING REQUIREMENTS

- A. PRE-TRACK PAVING AND SURFACING: Prior to the pouring of all track edges, Contractor shall be responsible for verifying the proper horizontal and vertical controls of all concrete formwork. This quality control process does not need to be completed by a licensed surveyor. However, the Contractor shall employ a licensed surveyor to determine finish surface grades of all track edging upon completion of initial concrete curing process. A digital file of the curb elevations shall be provided on a minimum 20-foot spacing, including points at all beginning, mid-, and end points of the concrete edgebands. Once the curbing is deemed to be within the tolerances required by the contract documents (no point along the curbing shall be greater than ¼ inch (0.02 feet) outside the design grades and no spot shall deviate more than ½" (0.04 ft.) from any other adjacent point within the 20-foot spaced curb survey), then the Contractor can pave the track surfacing area with asphaltic paving. Upon completion of the asphalt paving, Contractor shall complete a flood test to inspect for birdbaths and low points. Additionally, the pavement finish surface planarity shall be verified, and if necessary adjusted, by the Contractor using string line method. A mason's line held taught between two workman, shall be placed directly on the finished surface, from the new edgeband across to the inside track trench drain edgeband. A third workman shall check for separations between the mason's line and the finished surface that are equal to or greater than the specified tolerances. Areas of separation shall be outlined with marking paint and the depth of separation indicated. No deviation on the string shall be greater than one-quarter inch (0.02 feet).
- B. POST-TRACK SURFACING: Once the track surfacing is complete, the finished track surface shall also undergo a flood test to inspect for birdbaths and low points that may not be identified by the conformance survey.

### 3.04 TENNIS COURT CONFORMANCE SURVEYING REQUIREMENTS

- A. Prior to the pouring of all tennis court perimeter curbing, Contractor shall be responsible for verifying the proper horizontal and vertical controls of all concrete formwork. This quality control process does not need to be completed by a licensed surveyor. However, the Contractor shall employ a licensed surveyor to determine finish surface grades of all edgebands / curbing upon completion of initial concrete curing process. A digital file of the curb elevations shall be provided on a minimum 20-foot spacing, including points at all corners. Once the curbing is deemed to be within the tolerances required by the contract documents (no point along the curbing shall be greater than ¼ inch (0.02 feet) outside the design grades and no spot shall deviate more than ½" (0.04 ft.) from any other adjacent point within the 20-foot spaced curb survey), then the Contractor shall pave the tennis court area with asphaltic paving. Upon completion of the asphalt paving, Contractor shall survey the tennis court area utilizing all previous conformance survey data. The paving conformance survey shall be completed on a 20-foot longitudinal grid, with grades shot from baseline fence to baseline fence. Grades must be measured so that no point within the 20-foot grid deviates more than ¼" from any other point within the 20-foot grid.

- B. The tennis courts shall also undergo a flood test to inspect for birdbaths and low points that may not be identified by the conformance survey. A bird bath is a puddle of water that has not evaporated after one hour in 70 degrees F or warmer temperature. If the bird bath has a water depth greater than 1/16" (which shall be checked by using a nickel), as determined by the nickel being fully submerged in the birdbath, then corrective measures shall be taken by the Contractor prior to installation of the acrylic court surface.

END OF SECTION



SECTION 01 57 23

**STORMWATER POLLUTION PREVENTION**

**PART 1 GENERAL**

1.01 SUMMARY

- A. Construction shall adhere with the requirements of the California State Water Resource Control Board, General Permit for Storm Water Discharges Associated with Industrial Activities (General Permit). Project construction is covered under the General Permit WDID#:\_\_\_\_\_ (Write in prior to disturbing more than 1 acre of land).
- B. The project Stormwater Pollution Prevention Plan (SWPPP) applies to operations within the limits of work and adjacent points of discharge that may be outside the limits of work. The SWPPP describes the proposed facilities, identifies potential sources of pollution and recommends appropriate Best Management Practices (BMPs) to reduce the discharge of pollutants. The contractor shall be strictly held to the requirements of the General Permit and shall provide the services of Qualified Stormwater Practitioner (QSP) as the agent to the Owner, who is the Legally Responsible Person (LRP).
- C. Scope of work:  
Provide such work to satisfy the requirements of the General Permit including but not limited to:
  - 1. Qualified Stormwater Practitioner (QSP) services.
  - 2. Install, adjust and maintain all necessary; BMPs, non-stormwater pollutants, safe storage, hazardous material controls and construction activities to protect discharge with best available technology.
  - 3. Monitoring, testing and action plans as required by the project SWPPP Document.
  - 4. Qualified Stormwater Developer (QSD) services and amend the SWPPP whenever there is a change in construction or operations that will affect the discharge of pollutants, or change in schedule delaying completion of grading activities beyond completion date identified in the project SWPPP.
  - 5. All necessary data entry submit documentation to the Storm Water Multiple Application and Report Tracking System (SMARTS) during construction and closeout.
- D. Related sections can include, but may not be limited to the following:
  - 1. Section 01 50 00 - Construction Facilities and Temporary Controls
  - 2. Section 02 41 00 - Site Clearing and Demolition
  - 3. Section 31 20 00 - Earthwork
  - 4. Section 33 40 00 - Storm Drainage

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. California State Board of Water Resources Construction General Permit Order 2009-0009-DWQ
- B. SWPPP Document WDID#
- C. California Stormwater Quality Association (CASQA) Industrial and Commercial BMP Handbook.

1.03 MONITORING AND TESTING:

- A. Monitoring, testing, and action plans documentation required by the project SWPPP Document, and/or as required by the General Permit.

**PART 2 PRODUCTS – not applicable**

**PART 3 EXECUTION**

**3.01 PREPARATION, MONITORING AND DOCUMENTATION**

- A. Prior to installing any portion of the work, the contractor shall examine the site and verify that site conditions are acceptable to begin work.
- B. Prior to grading and demolition operations, the contractor shall install and manage all necessary BMPs with best available technology, making all necessary adjustments for the duration of construction.
- C. Contractor shall be responsible for all necessary, modifications and additions to the BMPs and site conditions to meet the requirements of the General Permit at no additional cost to the Owner.
- D. Regardless of construction schedule or weather conditions, it shall be the contractor's responsibility to; provide all necessary measures, adjust BMPs, protect discharge from pollutants and take necessary actions should numeric action levels be triggered, at no additional cost to the Owner.
- E. The QSP shall conduct all monitoring and testing and prepare action plans as required by the project SWPPP.
- F. The contractor shall provide QSD services and amend the SWPPP whenever there is a change in construction or operations that will affect the discharge of pollutants, or change in schedule that will delay completion of grading activities beyond completion date identified in the project SWPPP.
- G. Contractor shall prepare, track and submit all necessary documentation to SMARTS during construction and closeout.

END OF SECTION

# **STORM WATER POLLUTION PREVENTION PLAN (SWPPP)**

## **FACILITIES:**

**College of Marin  
835 College Ave.  
Kentfield, CA 94904**

**REPORT DATE: July, 2017**

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- 5.0 Certification Statement
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**GENERAL FACILITY INFORMATION**

Name of Facility: College of Marin  
Facility Address: 835 College Ave. Kentfield, CA 94904

Facility Contact: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Telephone: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_  
\_\_\_\_\_

Owner: \_\_\_\_\_

Operator: \_\_\_\_\_  
(if different from Owner)

Permit Information:

Initial Date of Coverage: \_\_\_\_\_  
Number of Storm Water Outfalls: \_\_\_\_\_  
Receiving Water: \_\_\_\_\_

Emergency Contact (preferably on-site):

Name: \_\_\_\_\_  
Telephone: \_\_\_\_\_

## 1.0 OVERVIEW

### 1.1 INTRODUCTION

This storm water pollution prevention plan (SWPPP) covers the operations at College of Marin. This plan was designed to meet the requirements of the California State Water Resource Control Board, Environmental Protection Agency, National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Industrial Activities (General Permit). This SWPPP describes these facilities and its operations, identifies potential sources of storm water pollution at the facility, recommends appropriate best management practices (BMPs) or pollution control measures to reduce the discharge of pollutants in storm water runoff, and provides for periodic review of this SWPPP.

### 1.2 OBJECTIVES

The primary goal of the storm water permit program is to improve the quality of surface waters by reducing the amount of pollutants potentially contained in the storm water runoff.

This SWPPP will:

1. identify sources of storm water and non-storm water contamination to the storm water drainage system;
2. identify and prescribe appropriate "source area control" type best management practices designed to prevent storm water contamination from occurring;
3. prescribe an implementation schedule so as to ensure that the storm water management actions prescribed in the Storm Water Pollution Prevention Plan are carried out and evaluated on a regular basis.

## 2.0 STORM WATER POLLUTION PREVENTION TEAM

The storm water pollution prevention team is responsible for developing, implementing, maintaining, and revising this SWPPP. The members of the team are familiar with the management and operations of College of Marin.

The member(s) of the team and their responsibilities (i.e. implementing, maintaining, record keeping, submitting reports, conducting inspections, employee training, conducting the annual compliance evaluation, testing for non-storm water discharges, signing the required certifications) are as follows:

Name & Title	Responsibility

## 3.0 POTENTIAL SOURCES OF POLLUTANTS

### 3.1 SITE MAP

Figure 1 (attached) presents a site map of College of Marin showing the following features as required by the permit:

- the facility property boundaries;
- a depiction of the storm drainage collection and disposal system, including all known surface and subsurface conveyances, with the conveyances named;
- any secondary or other containment structures;
- the location of all outfalls;
- the drainage area boundary for each storm water outfall;
- the surface area in acres draining to each outfall, including the percentage that is impervious such as paved, roofed, or highly compacted soil and the percentage that is pervious such as grassy areas and woods; existing structural storm water controls;
- the name and location of receiving waters, if any;
- and the location of activities and materials that have the potential to contaminate storm water shall also be depicted on the drainage base map.

### 3.2 INVENTORY OF POTENTIAL SOURCES OF CONTAMINATION

The following have been identified as potential sources of storm water contamination.

- Immediate access roads and rail lines;
- material handling sites (storage loading, unloading, transportation, or, conveyance of any raw material, finished product, intermediate product, by-product or waste;
- refuge sites;
- vehicle maintenance and cleaning areas;
- any other areas capable of contaminating storm water runoff.

## 4.0 BEST MANAGEMENT PRACTICES

Storm water management controls, or best management practices (BMPs), will be implemented to reduce the amount of pollutants in storm water discharged from College of Marin.

### 4.1 GENERAL REQUIREMENTS

- A. The following general requirements shall be met on all projects within the Owner.
1. Non-hazardous Material/Waste Management
    - a. Designated Area: The Contractor shall propose designated areas of the project site, for approval by the Owner Representative, suitable for material delivery, storage, and waste collection that, to the maximum extent practicable, are near construction entrances and away from catch basins, gutters, drainage courses, and creeks.
    - b. Granular Material
      - i) The Contractor shall store granular material at least ten feet away from catch basin and curb returns.
      - ii) The Contractor shall not allow granular material to enter the storm drains or creeks.
      - iii) When rain is forecast within 24 hours or during wet weather, the Owner Representative may require the Contractor to cover granular material with a tarpaulin and to surround the material with sandbags.
    - c. Dust Control: The Contractor shall use reclaimed water to control dust on a daily basis or as directed by the Owner Representative.
    - d. Cleaning Paved Storage Areas: The Contractor shall thoroughly clean all on-site paved areas used for storage of materials or otherwise utilized



or involved during the work immediately after the materials are removed from storage. Cleaning shall be accomplished by sweeping and not with use of water.

- e. Recycling
    - i) The Contractor, to the extent practicable, shall recycle aggregate base material, asphalt concrete, and Portland cement concrete as described in these Specifications.
    - ii) In addition, to the maximum extent practicable, the Contractor shall reuse or recycle any useful construction materials generated during the project.
  - f. Disposal
    - i) The Contractor shall maintain the project site in a clean and orderly manner at all times. To the extent practicable, the Contractor shall collect all scrap, debris, and waste material, and dispose of such materials properly. The Owner Representative may require the Contractor to clean and dispose of such materials at any time should the situation, in his opinion, constitute a danger.
    - ii) The Contractor shall inspect dumpsters for leaks and contact trash hauling contractors to replace or repair dumpsters that leak.
    - iii) The Contractor shall not discharge water on-site from cleaning dumpsters.
    - iv) The Contractor shall arrange for regular waste collection before dumpsters overflow.
2. Hazardous Material / Waste Management
- a. The Contractor shall label and store all hazardous materials, such as pesticides, paints, thinners, solvents, and fuels; and all hazardous wastes, such as waste oil and antifreeze; in accordance with the Marin County Hazardous Materials Storage Ordinance and all applicable State and Federal regulations.
  - b. Usage
    - i) When rain is forecast within 24 hours or during wet weather, the Owner Representative may prevent the Contractor from applying chemicals in outside areas.
    - ii) The Contractor shall not over-apply pesticides or fertilizers and shall follow material manufacturers instructions regarding uses, protective equipment ventilation, flammability, and mixing of chemicals. Over-application of a pesticide constitutes a "label violation" subject to an enforcement action by the Marin Agriculture Department.
  - c. Disposal
    - i) The Contractor shall arrange for regular hazardous waste collection to comply with time limits on storage of hazardous wastes.
    - ii) The Contractor shall dispose of hazardous waste only at authorized and permitted Treatment, Storage, and Disposal Facilities, and use only licensed hazardous waste haulers to remove the waste off-site, unless quantities to be transported are below applicable threshold limits for transportation specified in State and Federal regulations.
    - iii) If the Contractor qualifies as a "Conditionally Exempt Small Quantity Generator" as defined under State and Federal regulation and if the Contractor's business offices is located East Palo Alto, Los Altos, Los Altos Hills, Mountain View, Palo Alto, or Stanford, then the Contractor may dispose of this waste through a city-sponsored program.
3. Spill Prevention and Control
- a. The Contractor shall keep a stockpile of spill cleanup materials, such as rags, or absorbents, readily accessible on-site.

- b. The Contractor shall immediately contain and prevent leaks and spills from entering storm drains, and properly clean up and dispose of the waste and cleanup materials. If the waste is hazardous, the Contractor shall handle the waste as described in section A.2.c above.
  - c. The Contractor shall not wash any spilled material into streets, gutters, storm drains, or creeks and shall not bury spilled hazardous materials.
  - d. The Contractor shall report any hazardous materials to the Regional Water Quality Control Board at (510) 622-2300 and to the Owners Representative.
4. Vehicle/Equipment Cleaning
- a. The Contractor shall not perform vehicle or equipment cleaning on-site or in the street using soaps, solvents, degreasers, steam cleaning equipment, or equivalent methods.
  - b. The Contractor shall perform vehicle or equipment cleaning, with water only, in a designated, beamed area that will not allow rinse water to run off-site or into streets, gutters, storm drains, or creeks.
5. Vehicle/Equipment Maintenance and Fueling
- a. The Contractor shall perform maintenance and fueling of vehicles or equipment in a designated, bermed area or over a drip pan that will not allow run-on of storm water or runoff of spills.
  - b. The Contractor shall use secondary containment such as a drip pan, to catch leaks or spills any time that vehicle or equipment fluids are dispensed, changed, or poured.
  - c. The Contractor shall keep a stockpile of spill cleanup materials, such as rags or absorbents, readily accessible on-site.
  - d. The Contractor shall clean up leaks and spills of vehicle or equipment fluids immediately and dispose of the waste and cleanup materials as hazardous waste, as described in section A.2.c above.
  - e. The Contractor shall not wash any spilled material into streets, gutters, storm drains, or creeks and shall not bury spilled hazardous materials.
  - f. The Contractor shall report any hazardous materials to the Regional Water Quality Control Board at (510) 622-2300 and to the Owners Representative.
  - g. The Contractor shall inspect vehicles and equipment arriving on-site for leaking fluids and shall promptly repair leaking vehicles and equipment. Drip pans shall be used to catch leaks until repairs are made.
  - h. The Contractor shall recycle waste oil and antifreeze, to the maximum extent practicable.
  - i. The Contractor shall comply with Federal, State, and City requirements for above ground storage tanks.
6. Contractors Training and Awareness
- a. The Contractor shall train all employees/subcontractors on the storm water pollution prevention requirements contained in these Specifications.
  - b. The Contractor shall inform subcontractors of the storm water pollution prevention contract requirements and include appropriate subcontract provisions to ensure that these requirements are met.
  - c. The Contractor shall post warning signs in areas treated with chemicals.
  - d. The Contractor shall paint new catch basins, constricted as part of the project with a "No Dumping" stencil.

#### 4.2 ACTIVITY-SPECIFIC REQUIREMENTS

- A. The following activity-specific requirements shall be met on all projects within the Owner that include the listed activities.
  - 1. Paving Operations

- a. Project Site Management
    - i) When rain is forecast within 24 hours during wet weather, the Owner Representative may prevent the Contractor from paving.
    - ii) The Owner Representative may direct the Contractor to protect drainage courses by using control measures, such as earth dike, straw bale, and sand bags to divert runoff or trap and filter sediment.
    - iii) The Contractor shall cover drip pans or absorbent material under paving equipment when not in use.
    - iv) The Contractor shall cover catch basins and manholes when paving or applying seat coat, tack coat, slurry seal, or fog seal.
    - v) If the paving operation includes an on-site mixing plant, the Contractor shall comply with Marin County General Industrial Activities Storm Water Permit requirements.
  - b. Paving Waste Management: The Contractor shall not sweep or wash down excess sand (placed as part of a sand seal or to absorb excess oil) into gutters, storm drains, or creeks. Instead, the Contractor shall either collect the sand or return it to the stockpile, or dispose of it in a trash container. The Contractor shall not use water to wash down fresh asphalt concrete pavement.
2. Saw Cutting
    - a. During saw cutting, the Contractor shall cover or barricade catch basins using control measures, such as filter fabric, straw bales, sand bag, and fine gravel dams, to keep slurry out of both the sanitary and storm drain systems. When protecting a catch basin, the Contractor shall ensure that the entire opening is covered.
    - b. The Contractor shall shovel, absorb, or vacuum saw cut slurry and pick up the waste before moving to the next location or at the end of each working day, whichever is sooner.
    - c. If saw cut slurry enters catch basins, the Contractor shall remove the slurry from the storm drain system immediately.
  3. Contaminated Soil Management
    - a. On all projects involving grading or excavation, the Contractor shall look for contaminated soil as evidenced by site history, discoloration, odor, differences in soil properties, abandoned underground tanks or pipes, or buried debris. If the project is not within an area of known soil contamination and no evidence of soil contamination is found, then testing of the soil shall only be required if directed by the Owner Representative. The Contractor shall follow section 3.b below, if contamination is found.
    - b. If the project is within an area of known soil contamination or evidence of soil contamination is found, then soil from grading or excavation operations shall be tested. The soil shall be managed as required by Regional Water Quality Control Board.
    - c. If the project is found to be within an area of soil contamination not identified by the Owner in the project specifications, a change order shall be negotiated to cover additional work performed by the Contractor.
  4. Concrete, Grout, and Mortar Waste Management
    - a. Material Management: The Contractor shall store and keep covered concrete, grout, and mortar away from drainage areas and ensure that these materials do not enter the storm drain system.
    - b. Concrete Truck/Equipment Wash Out:
      - i) The Contractor shall not wash out concrete trucks or equipment into streets, gutters, storm drains, or creeks.
      - ii) The Contractor shall perform washout of concrete trucks or equipment off-site or in a designated area on-site where the water will flow onto dirt or into a temporary pit in a dirt area. The

Contractor shall let the water percolate into the soil and dispose of the hardened concrete in a trash container. If a suitable dirt area is not available, then the Contractor shall collect tie wash water and remove it off-site.

- c. Exposed Aggregate Concrete Wash Water
  - i) The Contractor shall avoid creating runoff by draining water from washing of exposed aggregate concrete to a dirt area. If a suitable dirt area is not available, then the Contractor shall filter the wash water through straw bales or equivalent material before discharging to the storm drain.
  - ii) The Contractor shall collect and return sweepings from exposed aggregate concrete to a stockpile or dispose of the waste in a trash container.
- 5. Painting
  - a. Painting Cleanup
    - i) Designated Area
      - a) The Contractor shall conduct cleaning of painting equipment and tools in a designated area that will not allow run-on of storm water or runoff of spills.
      - b) The Contractor shall not allow wash water from cleaning of painting equipment and tools into streets, gutters, storm drains, or creeks.
    - ii) Water-based Paint
      - a) The Contractor shall remove as much excess paint as possible from brushes, rollers, and equipment before starting cleanup.
      - b) To the maximum extent practicable, the Contractor shall dispose of wash water from aqueous cleaning of equipment and tools to the sanitary sewer.
      - c) Otherwise, the Contractor shall direct wash water onto dirt area and spade in.
    - iii) Oil-based Paint
      - a) The Contractor shall remove as much excess paint as possible from brushes, rollers, and equipment before starting cleanup.
      - b) To the maximum extent practicable, the Contractor shall filter paint thinner and solvents for reuse.
      - c) The Contractor shall dispose of waste thinner and solvent, and sludge from cleaning of equipment and tools as hazardous waste, as described in Section A.2.c above.
  - b. Material/Waste Management
    - i) The Contractor shall store paint, solvents, chemicals, and waste materials in compliance with the Marin County Hazardous Materials Storage Ordinances and all applicable State and Federal regulations. The Contractor shall store these materials in a designated area that will not allow run-on of storm water runoff of spills.
    - ii) The Contractor shall dispose of excess thinners, solvents, oil, and water-based paint as hazardous waste.
    - iii) The Contractor shall dispose of dry, empty paint cans, buckets, old brushes, rollers, rags, and drop cloths in the trash.
- 6. Earthwork: The Contractor shall maximize control of erosion and sediment by using the BMPs for erosion and sedimentation in the California Storm Water Best Management Practice Handbook – Construction Activity.

\*See California Storm Water Best Management Practice Handbook – Construction Activity

## 5.0 CERTIFICATION OF THE SWPPP

"I certify under penalty of law that this document and attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information contained in the plan. Based on my inquiry of the person, or persons, who manage the system, or those persons directly responsible for gathering the information; the information contained in this document is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for providing false information, including the possibility of fine and imprisonment. In addition, I certify under penalty of law that, based upon inquiry of persons directly under my supervision, to the best of my knowledge and belief, the provisions of this document adhere to the provisions of the storm water permit for the development and implementation of a Storm Water Pollution Prevention Plan and that the plan will be compiled with."

\_\_\_\_\_  
Signature of Plan Preparer

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Printed Name)

\_\_\_\_\_  
Title

\_\_\_\_\_  
Signature of Owner

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Printed Name)

\_\_\_\_\_  
Title

SECTION 02 41 00

**SITE CLEARING AND DEMOLITION**

**PART 1 GENERAL**

1.01 SUMMARY

- A. Furnish all labor, materials, equipment, facilities, transportation and services to complete all site clearing and demolition work plus all related activities as shown on the Drawings and/or specified herein.
- B. Scope of work: The general extent of the site clearing and demolition work is shown on the Drawings and can include, but is not necessarily limited to the following:
  - 1. Demolition, removal and disposal of designated items
  - 2. Careful removal, protection and re-installation of designated items
  - 3. Careful removal and salvage of designated items
  - 4. Disconnection and capping of existing utility and/or irrigation lines
  - 5. Incidental demolition of abandoned utility and irrigation lines
  - 6. Spraying until dead, clearing, grubbing vegetated areas and/or roto-tilling in existing turf areas.
  - 7. Protection of existing plant material
  - 8. Removal of designated trees and planting areas
- C. Related sections can include, but may not be limited to:
  - 1. Section 31 13 00 - Tree Protection
  - 2. Section 31 20 00 – Earthwork

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. State of California Department of Transportation Standard Specifications, Current Edition

1.03 SUBMITTALS

- A. Conform to requirements of front end Sections, Submittals and/or applicable Division One and Division Two specifications, General Conditions and Special Provisions.
- B. Indicate the proposed time line for site clearing and demolition work including all required shut off times and capping of utility services on the project schedule.
- C. Provide product information on herbicides to be used for approval prior to use.

1.04 QUALITY ASSURANCE

- A. The Owner shall obtain and pay for all permits required in connection with this work. Fees for the dumping of debris shall be paid for by the Contractor.

1.05 PROJECT CONDITIONS

- A. Dust Control:
  - 1. The contractor shall, at all times, prevent the formation of airborne dust on and around the project site with the use of sprinkled water or other means acceptable to the Owner's representative. Non-compliance with proper dust control measures shall be grounds for issuance of "stop work" orders by the Owner's representative until such time as satisfactory measures are implemented.

- B. Utility Services:
  - 1. Issue written notices of planned demolition operations to utility companies and coordinate site clearing and demolition improvements as requested by said utility companies.
  - 2. Existing power poles and lines serving existing occupied buildings shall remain. Arrange all necessary work in order to maintain utilities not designated for removal.
  - 3. Coordinate work in order to maintain utilities to any applicable temporary on-site facilities.

## **PART 2 PRODUCTS**

### 2.01 Herbicides

- A. All herbicides shall conform to Owner's approved chemicals list.
- B. Herbicide shall be non-selective broad spectrum systemic herbicide for perennial vegetation and straight contact herbicide for annual vegetation in accordance with a licensed pest control advisor or herbicide manufacturers recommendations.

## **PART 3 EXECUTION**

### 3.01 EXAMINATION

- A. Conform to Division One Sections.
- B. Carefully identify limits of demolition.
- C. Mark project areas as directed by the Owner's representative and as necessary to clearly identify the interface of items to be removed and items to be left in place intact.

### 3.02 PREPARATION

- A. Protection:
  - 1. Make provisions and take necessary precautions to protect all existing items not designated for removal. Any existing item or area damaged during construction operations shall be replaced or repaired to an "as-was" or better condition at no additional cost to the project and subject to the acceptance of the Owner's representative.
  - 2. Erect barriers, fences, guard rails, enclosures, chutes, and shoring as necessary to protect personnel, structures, and utilities remaining intact.
  - 3. Provide warning signs and lighting as necessary for vehicular and personnel protection. Maintain warning signs during construction as required by applicable safety ordinances and as reasonably prudent.
  - 4. Coordinate arrangements for items to be salvaged and turned over to the Owner.
  - 5. Notify Underground Service Alert (USA), (800) 642-2444, and local utility companies to verify locations of existing utilities a minimum of 48 hours prior to beginning work.
  - 6. Provide tree protection fencing prior to any demolition work.
- B. Traffic Access:
  - 1. Ensure minimum interference with roads, streets, driveways, sidewalk and adjacent facilities.
  - 2. Do not close or obstruct streets, sidewalk, alleys or passageways without acceptance from the Owner's representative.
  - 3. Provide approved alternate routes around closed or obstructed traffic ways as required by the Owner's representative.
  - 4. Maintain access to adjacent existing buildings to ensure uninterrupted operations during demolition work.

### 3.03 DEMOLITION

- A. General:
  - 1. Refer to drawings for extent of demolition work.
- B. Paving:
  - 1. Demolish paving in accordance with local noise ordinance regulations and as acceptable to the Owner's representative.
- C. Filling:
  - 1. Completely fill below-grade areas and voids resulting from demolition work. Install appropriate, acceptable fill material consisting of soil, gravel or sand, free of trash and debris, stones over 6" diameter, roots or other organic matter. Meet compaction requirements as specified.
- D. Other:
  - 1. If unanticipated mechanical, electrical or structural elements which conflict with intended function or design are encountered, investigate and measure both the nature and extent of the conflict. Submit report to Owner's representative in written, accurate detail. Pending receipt of directive from Owner's representative, rearrange selective demolition schedule as necessary to continue overall job progress without delay.
- E. Clearing and Grubbing:
  - 1. Remove trees as shown on Drawings. Removal shall include trunks and roots over one inch (1") in diameter to a depth of eighteen inches (18") below subgrade elevations.
  - 2. Mow all existing turf areas to a height of 1" and remove cuttings.
  - 3. Prior to site clearing, all existing vegetation (below twelve inches (12") in height) and turf areas to be removed shall be sprayed with a non-selective broad spectrum systemic herbicide for perennial vegetation and straight contact herbicide for annual vegetation in accordance with a licensed pest control advisor or herbicide manufacturers recommendations.
  - 4. Allow a sufficient period of time to ensure that all sprayed vegetation is dead (refer to manufacturer's recommendations).
  - 5. Irrigation heads, valves, and controllers shall be salvaged and provided to Owner.
  - 6. Clear/strip vegetative material from soil surface and remove unless noted otherwise. Existing turf areas to be removed to be stripped of remove organic soil
  - 7. Contractor is responsible for stockpiling and protecting all topsoil needed for landscaping improvements. Refer to Earthwork and Landscape Specifications.
- G. Utilities and Related Equipment:
  - 1. The locations of existing utilities, as may be shown on the Drawings, are approximate. Should existing utilities not shown on the Drawings be encountered during construction operations, notify the Owner's representative immediately, and re-direct work to avoid delay. The Owner's representative shall then determine what action, if any, is required.
  - 2. Remove all abandoned utilities as indicated and as uncovered by the work, and terminate in a manner conforming to code.
  - 3. Remove and salvage designated items and related equipment and deliver to a location acceptable to the Owner's representative.
- H. Underground Piping:
  - 1. Existing storm drain and irrigation systems, as may be shown on the Drawings, may be modified to allow for construction of new items as a part of this project. Caution shall be exercised so as not to damage underground piping not scheduled for removal.
  - 2. Remove underground piping as indicated, or as necessary, and backfill to designated compaction density.
  - 3. Manholes and lines scheduled for removal which connect to active systems shall have their active remaining portions capped, plugged, or blind-flanged as appropriate.



4. Materials used for pipe terminations and temporary connections shall be the same as the existing lines. Fittings and flanges shall be of weight and class suitable for the service in which used.

### 3.04 SALVAGE

#### A. Demolition:

1. Materials or equipment to be demolished shall become the property of the Contractor except for items specified to be salvaged for the Owner.
2. Carefully remove items to be salvaged to avoid damage.
3. Irrigation heads, and valves shall be salvaged and provided to Owner. Contractor shall clean and box items. Items shall be returned to Owner corporation yard.

#### B. Replacement:

1. In the event items not scheduled to be demolished are damaged, promptly replace or repair such items to an as-was or better condition per the discretion of the Owner's representative at no additional cost.

#### C. Materials scheduled for removal shall not be placed on view to prospective purchasers or sold on site.

### 3.05 CLEANING

#### A. Debris and Rubbish:

1. Remove and transport debris and rubbish as it accumulates and dispose in a legal manner via recognized haul routes per front end Sections, in a manner that will prevent spillage on streets or adjacent areas.
2. Remove all tools, equipment and appliances used for demolition from the site upon completion of the work.
3. Clean entire project area, adjacent streets, and pavements to a broom-clean, "stain-free" condition per the discretion of the Owner's representative.

END OF SECTION

SECTION 03 30 00

**CAST-IN-PLACE CONCRETE**

**PART 1 GENERAL**

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.
- B. Related Requirements:

- 1. Section 033300 "Architectural Concrete" for general building applications of specially finished formed concrete.
- 2. Section 321313 "Concrete Paving" for concrete pavement and walks.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.
- B. W/C Ratio: The ratio by weight of water to cementitious materials.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at project site.
  - 1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
    - a. Contractor's superintendent.
    - b. Independent testing agency responsible for concrete design mixtures.
    - c. Ready-mix concrete manufacturer.
    - d. Concrete Subcontractor.
    - e. Special concrete finish Subcontractor.
  - 2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, joint-filler strips, semirigid joint fillers, forms and form removal limitations, vapor-retarder installation, anchor rod and anchorage device installation tolerances, steel reinforcement installation and concrete protection.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
- C. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.
  - 1. Location of construction joints is subject to approval of the Architect and Engineer.

1.6 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For each of the following, signed by manufacturers:

1. Cementitious materials.
2. Admixtures.
3. Steel reinforcement and accessories.
4. Floor and slab treatments.
5. Adhesives.
6. Vapor retarders.
7. Repair materials.

B. Field quality-control reports.

C. Minutes of pre-installation conference.

#### 1.7 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.

B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

C. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician, Grade II.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage. Steel is to be kept clean and free of rust scales.

B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

#### 1.9 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When average high and low temperature is expected to fall below 40 deg F (4.4 deg C) for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301 (ACI 301M).
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

B. Hot-Weather Placement: Comply with ACI 301 (ACI 301M) and as follows:

1. Maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

## PART 2 - PRODUCTS

### 2.1 CONCRETE, GENERAL

- A. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
  - 1. ACI 301 (ACI 301M).
  - 2. ACI 117 (ACI 117M).

### 2.2 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
  - 1. Plywood, metal, or other approved panel materials.
  - 2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
    - a. High-density overlay, Class 1 or better.
    - b. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
    - c. Structural 1, B-B or better; mill oiled and edge sealed.
    - d. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.
  - 3. Overlaid Finish birch plywood.
- B. Form-Release Agent: Commercially formulated form-release agent that does not bond with, stain, or adversely affect concrete surfaces and does not impair subsequent treatments of concrete surfaces.
  - 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- C. Form Ties: Factory-fabricated, removable or snap-off glass-fiber-reinforced plastic or metal form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
  - 1. Furnish units that leave no corrodible metal closer than 1 inch (25 mm) to the plane of exposed concrete surface.
  - 2. Furnish ties that, when removed, leave holes no larger than 1 inch (25 mm) in diameter in concrete surface.
  - 3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

### 2.3 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.
- B. Low-Alloy-Steel Reinforcing Bars: ASTM A 706/A 706M, deformed.
- C. Plain-Steel Wire: ASTM A 1064/A 1064M.

### 2.4 REINFORCEMENT ACCESSORIES

- A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), plain-steel bars, cut true to length with ends square and free of burrs.
- B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded-wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:
  - 1. For concrete surfaces exposed to view, where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.
  - 2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
  - 3. For zinc-coated reinforcement, use galvanized wire or dielectric-polymer-coated wire bar supports.

## 2.5 CONCRETE MATERIALS

- A. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.
- B. Cementitious Materials:
  - 1. Portland Cement: ASTM C 150/C 150M, Type II
  - 2. Fly Ash: ASTM C 618, Class C.
  - 3. Slag Cement: ASTM C 989/C 989M, Grade 100 or 120.
- C. Normal-Weight Aggregates: ASTM C 33/C 33M, size 57, 67 or 7 coarse aggregate. Provide aggregates from a single source.
  - 1. Maximum Coarse-Aggregate Size: 1-1/2 inches
  - 2. Fine Aggregate: Conforming to ASTM C 33 and free of materials with deleterious reactivity to alkali in cement.
- D. Air-Entraining Admixture: ASTM C 260/C 260M.
- E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
  - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
  - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
  - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
  - 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
  - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
  - 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
- F. Water: ASTM C 94/C 94M.

## 2.6 WATERSTOPS

- A. Flexible Rubber Waterstops: CE CRD-C 513 for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.
- B. Flexible PVC Waterstops: CE CRD-C 572, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.
- C. Self-Expanding Butyl Strip Waterstops: Manufactured rectangular or trapezoidal strip, butyl rubber with sodium bentonite or other hydrophilic polymers, for adhesive bonding to concrete, 3/4 by 1 inch.

## 2.7 VAPOR RETARDERS

- A. Sheet Vapor Retarder: Polyethylene sheet, ASTM D 4397, not less than 15 mils (0.25 mm) thick. "Stego Wrap" or approved equal.

## 2.8 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.
- B. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, epoxy resin with a Type A shore durometer hardness of 80.

## 2.9 REPAIR MATERIALS

- A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch (3.2 mm) and that can be feathered at edges to match adjacent floor elevations.
  - 1. Cement Binder: ASTM C 150/C 150M, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
  - 2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
  - 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by underlayment manufacturer.

4. Compressive Strength: Not less than 4000 psi at 28 days when tested according to ASTM C 109/C 109M.
- B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch (6.4 mm) and that can be filled in over a scarified surface to match adjacent floor elevations.
1. Cement Binder: ASTM C 150/C 150M, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
  2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
  3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by topping manufacturer.
  4. Compressive Strength: Not less than 4000 psi at 28 days when tested according to ASTM C 109/C 109M.

#### 2.10 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301 (ACI 301M).
1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Cementitious Materials: contain no more than 30% by weight, of fly ash (ASTM C618, Type C) and/or slag (ASTM C989).
- C. Admixtures: Use admixtures according to manufacturer's written instructions.
- D. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.

#### 2.11 CONCRETE MIXTURES FOR BUILDING ELEMENTS

- A. Footings: Normal-weight concrete.
1. Minimum Compressive Strength; 3000 psi at 28 days.
  2. Maximum W/C Ratio: 0.65
  3. Slump Limit: 4 inches before adding high-range water-reducing admixture, plus or minus 1 inch.
- B. Slabs-on-Grade: Normal-weight concrete.
1. Minimum Compressive Strength: 4000 psi-at 28 days.
  2. Maximum W/C Ratio: 0.50.
  3. Slump Limit: 4 inches before adding high-range water-reducing admixture, plus or minus 1 inch

#### 2.12 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

#### 2.13 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and furnish batch ticket information.
1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

## PART 3 - EXECUTION

### 3.1 FORMWORK INSTALLATION

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301 (ACI 301M), to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117 (ACI 117M).
- C. Construct forms tight enough to prevent loss of concrete mortar.
- D. Construct forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
  - 1. Install keyways, reglets, recesses, and the like, for easy removal.
  - 2. Do not use rust-stained steel form-facing material.
- E. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- F. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- G. Chamfer exterior corners and edges of permanently exposed concrete.
- H. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- I. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- J. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- K. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

### 3.2 EMBEDDED ITEM INSTALLATION

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC 303.
  - 2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
  - 3. Install dovetail anchor slots in concrete structures as indicated.

### 3.3 VAPOR-RETARDER INSTALLATION

- A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer's written instructions.
  - 1. Lap joints 6 inches (150 mm) and seal with manufacturer's recommended tape.

### 3.4 STEEL REINFORCEMENT INSTALLATION

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
  - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete.

### 3.5 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect and Engineer.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least  $\frac{3}{4}$  inch as follows:
  - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of  $\frac{1}{8}$  inch (3.2 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
  - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut  $\frac{1}{8}$ -inch- (3.2-mm-) wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

### 3.6 WATERSTOP INSTALLATION

- A. Flexible Waterstops: Install in construction joints and at other joints indicated to form a continuous diaphragm. Install in longest lengths practicable. Support and protect exposed waterstops during progress of the Work. Field fabricate joints in waterstops according to manufacturer's written instructions.
- B. Self-Expanding Strip Waterstops: Install in construction joints and at other locations indicated, according to manufacturer's written instructions, adhesive bonding, mechanically fastening, and firmly pressing into place. Install in longest lengths practicable.

### 3.7 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections are completed.
- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.
- C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301 (ACI 301M).
  - 1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
  - 1. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
  - 2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301 (ACI 301M).
  - 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.



1. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
2. Maintain reinforcement in position on chairs during concrete placement.
3. Screed slab surfaces with a straightedge and strike off to correct elevations.
4. Slope surfaces uniformly to drains where required.
5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

### 3.8 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch (6 mm) in one direction.
  1. Apply scratch finish to surfaces to receive concrete floor toppings or mortar setting beds for bonded cementitious floor finishes.
- C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraighening until surface is left with a uniform, smooth, granular texture.
- D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
- E. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.
  1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

### 3.9 MISCELLANEOUS CONCRETE ITEM INSTALLATION

- A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
- C. Equipment Bases and Foundations:
  1. For supported equipment, install anchor bolts that extend through concrete base and anchor into structural concrete substrate.
  2. Prior to pouring concrete, place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  3. Cast anchor-bolt insert into bases. Install anchor bolts to elevations required for proper attachment to supported equipment.
  4. Mechanical anchors installed in concrete where specified on the plans to be ICC-ES approved. Anchors to be installed per the manufacturer's recommendation unless otherwise noted. See plans for restrictions. Acceptable anchors:

Kwik Bolt TZ by Hilti (ICC ESR-1917)  
Titen HD by Simpson (ICC ESR-2713)
- D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast-in inserts and accessories as shown on Drawings. Screed, tamp, and trowel finish concrete surfaces.

### 3.10 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 (ACI 301M) for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for remainder of curing period.
- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
  - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
    - a. Water.
    - b. Continuous water-fog spray.
    - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.
  - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
    - a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
    - b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
    - c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies does not interfere with bonding of floor covering used on Project.

### 3.11 JOINT FILLING

- A. Prepare, clean, and install joint filler according to manufacturer's written instructions.
  - 1. Defer joint filling until concrete has aged at least one month. Do not fill joints until construction traffic has permanently ceased.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joints clean and dry.
- C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches (50 mm) deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

### 3.12 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch (13 mm) in any dimension to solid concrete. Limit cut depth to 3/4 inch (19 mm). Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
  2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar matches surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
  3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
  2. After concrete has cured at least 14 days, correct high areas by grinding.
  3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
  4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
  5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch (6 mm) to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
  6. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch (19-mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
  7. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.
- F. Repair materials and installation not specified above may be used, subject to Architect's approval.

### 3.13 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Testing Agency: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.
- C. Inspections:
  1. Verification of use of required design mixture.
  2. Concrete placement, including conveying and depositing.
  3. Curing procedures and maintenance of curing temperature.
  4. Verification of concrete strength before removal of shores and forms from beams and slabs.

- D. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172/C 172M shall be performed according to the following requirements:
1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m) or fraction thereof.
  2. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. (76 cu. m) or fraction thereof of each concrete mixture placed each day.
    - a. When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
  3. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
  4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F (4.4 deg C) and below or 80 deg F (27 deg C) and above, and one test for each composite sample.
  5. Unit Weight: ASTM C 567/C 567M, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
  6. Compression Test Specimens: ASTM C 31/C 31M.
    - a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
    - b. Cast and field cure two sets of two standard cylinder specimens for each composite sample.
  7. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
    - a. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.
    - b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
  8. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
  9. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).
  10. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
  11. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
  12. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
  13. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

END OF SECTION 033000

SECTION 05 12 00

**STRUCTURAL STEEL**

**PART 1 GENERAL**

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
  - 1. Structural steel.
  - 2. Bolts, nuts and anchor rods.
  - 3. Grout.

1.3 DEFINITIONS

- A. Structural Steel: Elements of the structural frame indicated on Drawings and as described in AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

1.4 COORDINATION

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.
- B. Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

1.5 ACTION SUBMITTALS

- A. Shop Drawings: Show fabrication of structural-steel components.
  - 1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
  - 2. Include embedment Drawings.
  - 3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
- B. Welding Procedure Specifications (WPSs) and Procedure Qualification Records (PQRs): Provide according to AWS D1.1/D1.1M, "Structural Welding Code - Steel," for each welded joint.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For installer, fabricator and testing agency.
- B. Welding certificates.
- C. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.
- D. Mill test reports for structural steel, including chemical and physical properties.
- E. Field quality-control and special inspection reports.

## 1.7 QUALITY ASSURANCE

- A. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant.
- B. Installer Qualifications: A qualified installer who participates in the AISC Quality Certification Program and is designated an AISC-Certified Erector.
- C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
  - 1. Welders and welding operators performing work on bottom-flange, demand-critical welds shall pass the supplemental welder qualification testing, as required by AWS D1.8/D1.8M. FCAW-S and FCAW-G shall be considered separate processes for welding personnel qualification.
- D. Comply with applicable provisions of the following specifications and documents:
  - 1. AISC 303.
  - 2. AISC 341.
  - 3. AISC 360.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.
  - 1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.
- B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.
  - 1. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging and seals containers.
  - 2. Clean and relubricate bolts and nuts that become dry or rusty before use.
  - 3. Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F 1852 fasteners and for retesting fasteners after lubrication.

## PART 2 - PRODUCTS

### 2.1 STRUCTURAL-STEEL MATERIALS

- ~~A.~~ W and WT-Shapes: ASTM A 992/A 992M.
- B. Channels, Angles, S-Shapes: ASTM A 36/A 36M.
- C. Plate and Bar: ASTM A 36/A 36M.
- D. Hollow Structural Sections: ASTM A 500/A 500M, Grade B, structural tubing.
- E. Steel Pipe: ASTM A 53/A 53M, Type E or Type S, Grade B.
  - 1. Weight Class: Standard (Schedule 40) or Extra Strong (XS, Schedule 80) As indicated on plans.
  - 2. Finish: Black or red except where indicated to be galvanized.
- F. Welding Electrodes: Comply with AWS requirements.

### 2.2 BOLTS, CONNECTORS, AND ANCHORS

- A. All bolts and washers exposed to wet conditions to be galvanized.
- B. All bolts to be new and not to be reused.
- C. Headed Anchor Rods: ASTM F 1554, Grade 36, unless otherwise noted.
  - 1. Nuts: ASTM A 563 (ASTM A 563M) hex carbon steel.

2. Plate Washers: ASTM A 36/A 36M carbon steel.
3. Washers: ASTM F 436 (ASTM F 436M), Type 1, hardened carbon steel.
4. Finish: Hot-dip zinc coating, ASTM A 153/A 153M, Class C.

D. Threaded Rods: ASTM A 193/A 193M, Grade B7.

1. Nuts: ASTM A 563 (ASTM A 563M) hex carbon steel.
2. Washers: ASTM A 36/A 36M carbon steel.
3. Finish: Hot-dip zinc coating, ASTM A 153/A 153M, Class C.

## 2.3 PRIMER

- A. All steel exposed to wet conditions to be galvanized or epoxy primed and epoxy painted. All epoxy paint applied to steel to be compatible with the primer used.
- B. All interior steel to be prime coated unless otherwise noted.
- C. Galvanizing Repair Paint: ASTM A 780/A 780M.

## 2.4 GROUT

- A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107/C 1107M, factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

## 2.5 FABRICATION

- A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC 303, "Code of Standard Practice for Steel Buildings and Bridges," and to AISC 360.
- B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.
- C. Bolt Holes: Cut, drill or punch standard bolt holes perpendicular to metal surfaces.
- D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.
- E. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel members.
  1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.
  2. Baseplate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.
  3. Bolts and lag screws (3/8" diameter and greater): Hole diameter to be 1/16" larger than the bolt or lag screw diameter.
  4. Wood screws (diameter less than 3/8"): Hole diameter to be 1/32" larger than the wood screw diameter.

## 2.6 SHOP CONNECTIONS

- A. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
  1. Electrodes for welding to be as specified below:
    - a. Electrodes for structural steel:
      - 1) SMAW: E70XX low hydrogen.
      - 2) FCAW: E7XT-X (except -2, -3, -10, -GS) (AWS A5.20).

## 2.7 GALVANIZING

- A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123/A 123M.
  1. Fill vent and drain holes that are exposed in the finished Work unless they function as weep holes, by plugging with zinc solder and filing off smooth.

## 2.8 SOURCE QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform shop tests and inspections.
  - 1. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.
- B. Prepare test and inspection reports.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify, with certified steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.
  - 1. Prepare a certified survey of existing conditions. Include bearing surfaces, anchor rods, bearing plates, and other embedments showing dimensions, locations, angles, and elevations.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated.

### 3.3 ERECTION

- A. Set structural steel accurately in locations and to elevations indicated and according to AISC 303 and AISC 360.
- B. Baseplates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.
  - 1. Set plates for structural members on wedges, shims, or setting nuts as required.
  - 2. Weld plate washers to top of baseplate.
  - 3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
  - 4. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.
- C. Maintain erection tolerances of structural steel within AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."
- D. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that are in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
  - 1. Level and plumb individual members of structure.
  - 2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.
- E. Splice members only where indicated.
- F. Do not use thermal cutting during erection.
- G. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.
- H. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1/D1.1M and manufacturer's written instructions.



### 3.4 FIELD CONNECTIONS

- A. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
  - 1. Comply with AISC 303 and AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.

### 3.5 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:
  - 1. Verify structural-steel materials and inspect steel frame joint details.
  - 2. Verify weld materials and inspect welds.
- B. Welded Connections: Visually inspect field welds according to AWS D1.1/D1.1M.

### 3.6 REPAIRS AND PROTECTION

- A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing and repair galvanizing to comply with ASTM A 780/A 780M.

END OF SECTION 051200

SECTION 05 72 10  
**ORNAMENTAL METAL FENCING AND GATES**

**PART 1 GENERAL**

1.1 RELATED DOCUMENTS:

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. DESCRIPTION: Provide Ornamental Metal Fencing, complete, as shown and specified per Contract Documents.
- B. RELATED WORK SPECIFIED ELSEWHERE:
  - 1. Section 02 83 00 – Chain Link Fencing
  - 2. Section 03 33 00 – Cast-in-Place Concrete
  - 3. Section 05 12 00 - Structural Steel

1.3 QUALITY ASSURANCE:

- A. Provide ornamental metal fences and gates as complete units controlled by a single source including necessary erection accessories, fittings, and fastenings.
- B. Reference Standards: All welding shall be per AWS D1.1 Structural Welding Code.
- C. Qualifications: All welders employed for work hereunder shall hold current AWS certification.

1.4 SUBMITTALS:

- A. Product Data: Submit manufacturer's technical data, and installation instructions for ornamental metal fencing, gates, and accessories.
- B. Shop Drawings: Submit shop drawings indicating extent, type, gate locations, and post footing details.

1.5 GUARANTEE:

- A. Submit upon completion of the work, in the form prescribed under Section 01700 – Contract Closeout, covering all materials and workmanship under this Section for a period of one (1) year and five (5) years against rust from the date of final acceptance by the Owner Representative.

**PART 2 PRODUCTS**

2.1 MATERIALS:

- A. ORNAMENTAL METAL FENCE:
  - 1. General: Fences and gates shall be the Heavy Regal System welded construction, manufactured by Builders Fence Company, Inc., or approved equal.
  - 2. Architectural and Miscellaneous Steel: ASTM A36.
  - 3. Hot Rolled Structural Steel: ASTM A500
  - 1. Lock Box: See plan for size, must be able to accommodate Panic Hardware
  - 2. Hinges: SS Barrel type ball bearing; No. 833353 manufactured by the Builders Fence Company, Inc., or approved equal, for exterior use.
  - 3. Drop Rod; Lockable: No P491133; ¾ inch diameter rod; padlock eyes included; manufactured by the Builders Fence Company, Inc., or approved equal. Provide bolt sleeve for insertion into concrete.
  - 4. Gate: Must be able to be locked in the open position at 180 degrees from closed position.

5. Miscellaneous Hardware: Items of hardware such as padlock eyes, etc., shall be fabricated by the fence manufacturer.
- B. FASTENINGS:
1. General: Furnish bolts, nuts, screws, washers, and other various fastenings necessary for proper erection of work.
  2. Exposed in Finished Surfaces: Countersunk Phillips flat head screws, unless otherwise shown, finish to match adjacent surfaces.
  3. Expansion Bolts: FS FF-S-325, Group III expansion shield (self-drilling tubular expansion shield bolt anchor) Type 1 or 2, unless otherwise shown.
- C. GALVANIZING:
1. General: Hot-dip process per ASTM A153, A385 or A386, as Applicable Minimum coating: 2 oz. per square foot.
  2. Repair Treatment: Galvaloy or approved equal.
- D. FINISH: All pickets, channels, posts, fittings and accessories shall be powder coated. Color shall be **Black**.

## 2.2 FABRICATION:

- A. GENERAL: Shop assemble work in largest practicable sections to minimize field connections. File or grind smooth parts exposed to finish view; remove weld marks and leave free of noticeable marks. Bends, twists, open joints in finished members or projecting edges or corners at connections will not be permitted. Provide bolts and fastenings necessary to complete fabrication.
- B. ASSEMBLY:
1. General: Provide as shown; pickets shall be welded to rails top and bottom. See drawing for typical welding location.
  2. Welding: Per AWS Standards. Grind all welds smooth on exposed surfaces. Spot welding not permitted on exposed surfaces.
  3. Gates: Fully welded one-piece frame, pickets welded to horizontal frame members top, bottom and sides. Install top hinge reverse to prevent unauthorized removal of gate. See drawing for typical welding locations.
  4. Reinforcement: Provide proper reinforcement for hardware and where required on metal work. See gate plan for reinforcement location.
  5. Hardware: Install as recommended by manufacturer as shown.
- C. MATERIALS:
1. End post and line post shall be 4" x 4" x 3/16, Tubular Steel. (see plan for details). I
  2. Gate/Hinge Post: Shall be 4" x 4" x 3/16 o Tubular Steel (see plan for details).
  3. Horizontal: Top and Bottom Rail shall be 2" x 2" x .095 Tubular Steel Weld 3 sides of each end (top sides only) to end on line post (see plan for details).
  4. Vertical Tubing: Shall be 1" x 1" x .095 Tubular Steel, weld vertical tubing to horizontal top and middle channel. Weld caps four (4) sides on each channel. (on top-see plans for details) Butt four (4) sides (typical-see plans for details).
- D. GALVANIZING: All galvanizing shall be performed after fabrication in the largest practical sections. All areas burned off or damaged during fabrication or erection shall be treated with specified protective compound.
- E. PRIMING: Thoroughly clean all steel. Apply one coat or primer iron oxide thoroughly and evenly, well worked into joints and crevices.
- F. FINISH: Apply industrial enamel as specified by Paint Section, per manufacturer's recommendations.

## 2.3 ACCESSORIES

- A. Ornamental Picket Fence Accessories: Provide indicated items required to complete fence system. Galvanize each ferrous metal item in accordance with ASTM B695 and finish to match framing.
- B. Post Caps: Formed steel, cast of malleable iron or aluminum alloy, weather tight closure cap.
- C. Picket Tops: Pinch and weld to a point.
- D. Concrete: Refer to section 03 30 00 – Cast-in-Place Concrete

## **PART 3 EXECUTION**

### 3.1 EXAMINATION OF CONDITIONS:

- A. SUBSTRATE CONDITIONS: Examine substrate. Report major defects to Owner's Representative. Starting of work is acceptance of conditions as they exist.
- B. JOB MEASUREMENTS: The Contractor shall take field measurements for this work and be responsible for it. Report any major discrepancy between plan and field dimension to the Owner's Representative.

### 3.2 INSTALLATION:

- A. GENERAL: Install in strict conformance with referenced standards, manufacturer's written directions, as shown and as specified.
- B. COORDINATION: Deliver items to be set in concrete or masonry, complete with the clips, anchors or bolts necessary to secure them in place.
- C. WORKMANSHIP: Set work plumb and true; properly assemble and erect in a rigid and workmanlike manner. Replace, or repair parts damaged during erection in an acceptable manner.
- D. GALVANIZING: All areas damaged during erection shall be treated with specified protective compound.
- E. FIELD TOUCH-UP: Touch-up damaged surfaces as recommended by the paint manufacturer and Owner's Representative.
- F. PROTECTION: After erection, provide proper protection from other construction operations.

### 3.3 ADJUSTMENTS AND MAINTENANCE:

- A. Prior to acceptance of project, all moveable parts shall be properly adjusted to assure smooth operation.

### 3.4 CLEANING:

- A. Upon completion, thoroughly clean all exposed surfaces in a manner that will not affect the finish appearance.

END OF SECTION

SECTION 12 93 00

**SITE FURNISHINGS**

**PART 1 GENERAL**

1.01 SUMMARY

Furnish all labor, materials, miscellaneous hardware, foundations, miscellaneous appurtenances, facilities, transportation and services required for installation of all site furnishings and related work as shown on the Drawings and/or specified herein.

- A. Scope of work:  
The general extent of work contained in this section is shown on the drawings and can include, but may not be limited to, installation of the following:
1. Soccer goals
  2. Soccer corner flags
  3. Soccer Media Press Box (Alt)
  4. Lacrosse Net barrier system
  5. Drinking fountain
  6. Outdoor showers
  7. Scoreboard
  8. Tennis court post
  9. Tennis court Nets
  10. Tennis court center strap
  11. Tennis court center strap anchor
  12. Beach volleyball post and netting
  13. Beach volleyball Pole Pads
  14. 90 Degree Volleyball Curb and Padding
  15. Boundary lines at Volleyball Courts
  16. Windscreen
  17. Sand pit forms and sand catchers
  18. Take off boards
  19. Truncated Domes
- B. Related sections can include, but may not be limited to:
1. Section 32 12 16 - Asphaltic Concrete Pavement
  2. Section 32 13 13 - Portland Cement Concrete
  3. Section 32 18 00 - Miscellaneous Paving and Surfacing

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. State of California Department of Transportation Standard Specifications, current edition.

1.03 SUBMITTALS

- A. Conform to front end Sections, Submittals and applicable Division One and Division Two specifications, General Conditions and/or Special Provisions.
- B. Product Data: Submit catalog cut sheets of all materials and equipment proposed to be furnished and/or installed under this portion of the work. Include the manufacturer and distributor name, sub-contractor as applicable. Insure that the cut sheets clearly describe the specific product by catalog number and that additional non-specified products that may appear on the same cut sheet are crossed out where applicable.
- C. Samples: Submit samples of colors and finishes for all applicable products and furnishings for selection by Owner's Representative.

- D. Shop Drawings: Submit complete shop drawings for all materials or furnishings requiring field or shop fabrication.

1.04 QUALITY ASSURANCE

- A. Review: All equipment shall be reviewed for conformance with the intent of the Contract Documents and accepted by the contractor prior to installation. All site furnishings shall be in a new, "first-class" condition, per the discretion of the Owner's Representative, prior to Final Acceptance.

1.05 DELIVERY, STORAGE AND HANDLING

- A. The contractor is responsible for coordination of the delivery, acceptance, handling and storage of all site furnishings.
- B. Store and handle site furnishings as acceptable to the Owner's Representative and so that work or access of others is not impeded.
- C. The contractor shall protect all site furnishings from theft or damage at all times until such items have been accepted by the Owner.

**PART 2 PRODUCTS**

2.01 SITE FURNISHINGS

	Description	Manufacturer	Model #	Finish/Color	Distributor/Contact
A.	Soccer Goal & Wheel Kit (2 Goals and Kit)	Sportsfield Specialties	SG4950 / SG4955	Powder Coated/ White	Sportsfield Specialties, Inc. (888) 975-3343
B.	Soccer Nets (1 Per Goal)	Sportsfield Specialties		White	Sportsfield Specialties, Inc. (888) 975-3343
C.	Soccer Corner Flags – 2 sets	Sportsfield Specialties	SG6B1104	Yellow base w/ red flag – set of 4	Sportsfield Specialties, Inc. (888) 975-3343
D.	Mobile Press Box (Bid Alternate)	AAE Sports	DONEKY Ultimate Media Package with storage	Aluminum Finish, Banner, Canpy, Weather screen TBD	<a href="http://www.aaesports.com/">http://www.aaesports.com/</a> 800-523-5471
E.	Tennis Court Nets (1 Per Court)	Douglas Industries	30036T	N/A	Douglas Industries Ph: 800-553-8907
F.	Tennis Court Post (Per Plans)	Douglas Industries	63034SS	Black	Douglas Industries Ph: 800-553-8907
G.	Tennis Court Center Strap (1 Per Court)	Douglas Industries	30603	N/A	Douglas Industries Ph: 800-553-8907
H.	Tennis Court Center Strap Anchor (1 Per Court)	Douglas Industries	63428	N/A	Douglas Industries Ph: 800-553-8907
I.	Beach Volleyball Pole & Net System (1 Per Court)	Sports Imports	SV15, HDNR-B3.5 SVA SVN-28 NA2	Black Powder Coat Poles	(800) 556-3198 4000 Parkway Lane Hilliard, OH 43026
J.	Beach Volleyball Pole Pads (1 Set Per Court)	Sports Imports	SVP Level II	Black pads w/ custom text lettering and logo	(800) 556-3198 4000 Parkway Lane Hilliard, OH 43026
K.	90 Degree Volleyball Curb Padding	Volleyball USA	Curb Pad 90 degree	TBD	(800) 494-3933 14615 NE 91st St. Building B Redmond, WA 98052
L.	Boundary Lines (one at each	Volleyball USA	4" Premium	Black	(800) 494-3933

	court)		Boundary Lines		14615 NE 91st St. Building B Redmond, WA 98052
M.	Outdoor Shower (2 Station)	Volleyball USA	Multi Head and Foot Shower	N/A	(800) 494-3933 14615 NE 91st St. Building B Redmond, WA 98052
N.	Scoreboard – Soccer	Daktronics	SO-2008-A- PV-F with TNMC team name message center	Black board, with white letter and Gold accent	Daktronics (800) 325-8766
O.	Drinking Fountain – Pedestal (Front access)	Most Dependable Fountains	10145SM	TBD	MDF: 800-552-6331
P.	Drinking Fountain – Wall Mount	Elkay	VRCTL8WSK	N/A	Elkay Headquarters 2222 Camden Court Oak Brook, IL 60523 Phone: 630-574-8484
Q.	Lacrosse Safety Netting with ground sleeves	Sportsfield Specialties	BSS210	Black	Sportsfield Specialties, Inc. (888) 975-3343
R.	Windscreen at Volleyball	Big Signs	Windscreen	Black with custom letters and logos	BigSigns.com (800) 790-7611
S.	Long Jump/Triple Jump Sand Pit Sand Catchers	Sportsfield Specialties	SP6010	N/A	Sportsfield Specialties, Inc. (888) 975-3343
T.	Long Jump/Triple Jump Take- off Boards w/Track Surfacing	Sportsfield Specialties	TFLT0012SS	N/A	Sportsfield Specialties, Inc. (888) 975-3343
U.	Truncated Domes	East Jordan	#700540	Yellow	East Jordan Foundary 301 Spring Street, East Jordan, MI 49727 (800)874-4100
V.	Anti-skate Devices	Skate Stoppers	#FA 902.5	6061-T6 Aluminum Clear anodized	Skate Stoppers 1547 N. Cuyamaca St. El Cajon, CA 92020 619-447-6374
W.	Medallions	Pineapple Grove Designs	N/A	TBD	Pineapple Grove Designs (800) 771-4595

### PART 3 EXECUTION

#### 3.01 SEQUENCING AND SCHEDULING

- A. Coordinate construction timing of installation of site furnishings in conformance with all other pertinent work.
- B. Concrete footings shall conform to requirements of Section 32 13 13 Portland Cement Concrete unless noted otherwise.

#### 3.02 INSTALLATION

- A. Concrete Footings: Install as shown in Drawings unless noted otherwise.
- B. Equipment: Conform to layout shown on Drawings. Erect in strict conformance with Details, accepted Shop Drawings, and manufacturer's instructions.
- C. All bolts shall be cut back to within three threads of the nut. Relevant to benches, bleachers, and other materials with exposed bolts.

#### 3.03 FIELD QUALITY CONTROL

- A. All site furnishings shall be inspected and accepted upon delivery by the Contractor. Final acceptance

of site furnishings and locations of site furnishings shall be per the discretion of the Owner's Representative.

END OF SECTION



SECTION 26 05 10

**GENERAL ELECTRICAL REQUIREMENTS**

**PART 1 GENERAL**

1.01 Description of Work

- A. The work of this Section consists of providing all required labor, supervision, materials and equipment to satisfactorily complete all electrical installations that are shown on the Drawings, included in these specifications, or otherwise needed for a complete and fully operating facility.
- B. Furnish and install all required in-place equipment, conduits, conductors, cables and any miscellaneous materials for the satisfactory interconnection and operation of all associated electrical systems.

1.02 Related Work

- A. This Section provides the basic Electrical Requirements which supplement the General Requirements of Division 1 and apply to all Sections of Division 26.

1.03 Submittals

- A. As specified in Division 1. Submit to the Engineer shop drawings, manufacturer's data and certificates for equipment, materials and finish, and pertinent details for each system specified. Information to be submitted includes manufacturer's descriptive literature of cataloged products, equipment, drawings, diagrams, performance and characteristic curves as applicable, test data and catalog cuts. Obtain written approval before procurement, fabrication, or delivery of the items to the job site. Partial submittals are not acceptable and will be returned without review. Furnish manufacturer's name, trade name, catalog model or number, nameplate data, size, layout dimensions, capacity, project specification and paragraph reference, applicable Federal, Industry and Technical Society Publication References, and years of satisfactory service of each item required to establish contact compliance. Photographs of existing installations and data submitted in lieu of catalog data are not acceptable and will be returned without approval.
- B. Organize submittals for equipment and items related to each specification section together as a package.
- C. Proposed substitutions of products will not be reviewed or approved prior to awarding of the Contract.
- D. Substitutions shall be proven to the Engineer to be equal or superior to the specified product. Engineer's decision is final. The Contractor shall pay all costs incurred by the Engineer in reviewing and processing any proposed substitutions whether or not a proposed substitution is accepted.
- E. If a proposed substitution is rejected, the contractor shall furnish the specified product at no increase in contract price.
- F. If a proposed substitution is accepted, the contractor shall be completely responsible for all dimensional changes, electrical changes, or changes to other work which is a result of the

substitution. The accepted substitution shall be made at no additional cost to the owner or design consultants.

- G. If a proposed substitution is accepted after bid, the contractor should be required to show the credit due to the owner.

#### 1.04 Quality Assurance

- A. Codes: All electrical equipment and materials, including installation and testing, shall conform to the latest editions following applicable codes:
  - 1. California Electrical Code (CEC).
  - 2. Occupational Safety and Health Act (OSHA) standards.
  - 3. All applicable local codes, rules and regulations.
  - 4. Electrical Contractor shall possess a C-10 license and all other licenses as may be required. Licenses shall be in effect at start of this contract and be maintained throughout the duration of this contract.
- B. Variances: In instances where two or more codes are at variance, the most restrictive requirement shall apply.
- C. Standards: Equipment shall conform to applicable standards of American National Standards Institute (ANSI), Electronics Industries Association (EIA), Institute of Electrical and Electronics Engineers (IEEE), and National Electrical Manufacturers Association (NEMA).
- D. Underwriter Laboratories (UL) listing is required for all equipment and materials where such listing is offered by the Underwriters Laboratories. Provide service entrance labels for all equipment required by the NEC to have such labels.
- E. The electrical contractor shall guarantee all work and materials installed under this contract for a period of one (1) year from date of acceptance by owner.
- F. All work and materials covered by this specification shall be subject to inspection at any and all times by representatives of the owner. Work shall not be closed in or covered before inspection and approval by the owner or his representative. Any material found not conforming with these specifications shall, within 3 days after being notified by the owner, be removed from premises; if said material has been installed, entire expense of removing and replacing same, including any cutting and patching that may be necessary, shall be borne by the contractor.

#### 1.05 Drawings

- A. Drawings: The electrical Drawings shall govern the general layout of the completed construction.
  - 1. Locations of equipment, panels, pullboxes, conduits, stub-ups, ground connections are approximate unless dimensioned; provide and verify locations with the Engineer prior to installation.

2. Review the Drawings and Specification Divisions of other trades and perform the electrical work that will be required for those installations.
3. Should there be a need to deviate from the Electrical Drawings and Specifications, submit written details and reasons for all changes to the Engineer for approval.
4. The general arrangement and location of existing conduits, piping, apparatus, etc., is approximate. The drawings and specifications are for the assistance and guidance of the contractor, exact locations, distances and elevations are governed by actual field conditions. Accuracy of data given herein and on the drawings is not guaranteed. Minor changes may be necessary to accommodate work. The contractor is responsible for verifying existing conditions. Should it be necessary to deviate from the design due to interference with existing conditions or work in progress, claims for additional compensation shall be limited to those for work required by unforeseen conditions as determined by the Engineer.
5. All drawings and divisions of these specifications shall be considered as whole. This contractor shall report any apparent discrepancies to the Engineer prior to submitting bids.
6. The contractor shall be held responsible to have examined the site and compared it with the specifications and plans and to have satisfied himself as to the conditions under which the work is to be performed. He shall be held responsible for knowledge of all existing conditions whether or not accurately described. No subsequent allowance shall be made for any extra expense due to failure to make such examination.

1.06 Closeout Submittals

- A. Manuals: Furnish manuals for equipment where manuals are specified in the equipment specifications or are specified in Division 1.

1.07 Coordination

- A. Coordinate the electrical work with the other trades, code authorities, utilities and the Architect.
- B. Provide and install all trenching, backfilling, conduit, pull boxes, splice boxes, etc. for all Utility Company services to the locations indicated on the Drawings. All materials and construction shall be in accordance with the requirements for all the Utility Companies. The contractor shall be responsible for completing the (N) service per PG&E's Greenbook current standards and substructure package. Prior to performing any work, the Electrical Contractor shall coordinate with the various Utility Companies to verify that all such work and materials shown on the Drawings are of sufficient sizes and correctly located to provide services on the site. The contractor shall obtain, provide and coordinate all requirements noted in PG&E's substructure package to successfully complete new service. The Electrical Contractor shall verify with all the Utility Companies that additional contractor furnished and installed work is not required. If additional work, materials, or changes are required by any of the Utility Companies, the Electrical Contractor shall advise the Engineer of such changes and no further work shall then be performed until instructed to do so by the Engineer.
- C. Utility Company charges shall be paid by the Owner.

- D. Contractor shall pay all inspection and other applicable fees and procure all permits necessary for the completion of this work.
- D. Where connections must be made to existing installations, properly schedule all the required work, including the power shutdown periods.
- E. When two trades join together in an area, make certain that no electrical work is omitted.

1.08 Job Conditions

- A. Operations: Perform all work in compliance with Division 1
  - 1. Keep the number and duration of power shutdown periods to a minimum.
  - 2. Show all proposed shutdowns and their expected duration on the construction schedule. Schedule and carry out shutdowns so as to cause the least disruption to operation of the Owner's facilities.
  - 3. Carry out shutdown only after the schedule has been approved, in writing, by the owner. Submit power interruption schedule 15 days prior to date of interruption.
- B. Construction Power: Unless otherwise noted in Division 1 of these specifications, contractor shall make all arrangements and provide all necessary facilities for temporary construction power from the owner's on site source. Energy costs shall be paid for by the Owner
- C. Storage: Provide adequate storage for all equipment and materials which will become part of the completed facility so that it is protected from weather, dust, water, or construction operations.

1.09 Damaged Products

- A. Notify the Engineer in writing in the event that any equipment or material is damaged. Obtain approval from the Engineer before making repairs to damaged products.

1.10 Locations

- A. General: Use equipment, materials and wiring methods suitable for the types of locations in which they are located.
- B. Dry Locations: All those indoor areas which do not fall within the definition below for Wet Locations and which are not otherwise designated on the Drawings.
- C. Wet Locations: All locations exposed to the weather, whether under a roof or not, unless otherwise designated on the Drawings.

1.11 Safety and Indemnity

- A. The Contractor is solely and completely responsible for conditions of the job site including safety of all persons and property during performance of the work. This requirement will apply continually and not be limited to normal working hours. The contractor shall provide and maintain throughout the work site proper safeguards including, but not limited to, enclosures, barriers, warning signs, lights, etc. to prevent accidental injury to people or damage to property.

- B. No act, service, drawing review or construction review by the Owner, the Engineer or their Consultants is intended to include reviews of the adequacy of the Contractors safety measures in or near the construction site.
- C. The Contractor performing work under this Division of the Specifications shall hold harmless, indemnify, and defend the Owner, the Engineer, their consultants, and each of their officers, agents and employees from any and all liability claims, losses, or damage arising out of or alleged to arise from bodily injury, sickness, or death of a person or persons and for all damages arising out of injury to or destruction of property arising directly or indirectly out of or in connection with the performance of the work under this Division of the Specifications, and from the Contractor's negligence in the performance of the work described in the construction contract documents, but not including liability that may be due to the sole negligence of the Owner, the Engineer, their Consultants or their officers, agents and employees.
- D. The project work area does not contain asbestos materials. However, if a work area is encountered that does contain asbestos materials, the contractor is advised to coordinate with the owner and it's asbestos abatement consultant all measures necessary to provide installation of conduit, and hangers. All asbestos containing materials related work shall conform to the directions given by the owner. Nothing herein shall be construed to create a liability for American Consulting Engineers regarding asbestos abatement measures.

#### 1.12 Access Panels and Doors

- A. The Contractor shall install access panels as required where floors, walls or ceilings must be penetrated for access to electrical, control, fire alarm or other specified electrical devices. The minimum size panel shall be 14" x 14" in usable opening. Where access by a service person is required, minimum usable opening shall be 18" x 24".
- B. All access doors installed lower than 7'-0" above finished floor and exposed to public access shall have keyed locks.
- C. Where specific information or details relating to access panels differ from these specifications, shown on drawings and or details or on other Divisions of work, these requirements shall supersede these specifications.
- D. Approved Manufacturers: Subject to compliance with requirements under Architectural Specifications, Milcor, Karp, Nystrom or Cesco.
  - 1. Milcor Style K (plaster)
  - 2. Milcor Style DW (gypsum board)
  - 3. Milcor Style M (masonry)
  - 4. Milcor Style "Fire Rated" where required.

## **PART 2 PRODUCTS**

### 2.01 Standard of Quality

- A. Products that are specified by manufacturer, trade name or catalog number establish a standard of quality and do not prohibit the use of equal products of other manufacturers provided they are approved by the Engineer prior to installation.

- B. **Material and Equipment:** Provide materials and equipment that are new and are current products of manufacturers regularly engaged in the production of such products. The standard products shall have been in satisfactory commercial or industrial use for two years prior to bid opening. The two-year period includes use of equipment and materials of similar size under similar circumstances. For uniformity, only one manufacturer will be accepted for each type of product.
- C. **Service Support:** Submit a certified list of qualified permanent service organizations including their addresses and qualification for support of the equipment. These service organizations shall be convenient to the equipment installation and able to render service to the equipment on a regular and emergency basis during the warranty period of the contract.
- D. **Manufacturer's Recommendations:** Where installation procedures are required to be in accordance with manufacturer's recommendations, furnish printed copies of the recommendations prior to installation. Installation of the item shall not proceed until recommendations are received. Failure to furnish recommendation shall be cause for rejection of the equipment or material.

#### 2.02 Nameplates

- A. For each piece of electrical equipment, provide a manufacturer's nameplate showing his name, location, the pertinent ratings, the model designation, and shop order number.
- B. Identify each piece of equipment and related controls with a rigid laminated engraved plastic nameplate. Unless otherwise noted, nameplates shall be melamine plastic 0.125 inch thick, white with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core. Minimum size of nameplates shall be 0.5 by 2.5 inches unless otherwise noted. Where not otherwise specified, lettering shall be a minimum of 0.25 inch high normal block style. Engrave nameplates with the inscriptions indicated on the Drawings and, if not so indicated, with the equipment name. Securely fasten nameplates in place using two stainless steel or brass screws.
- C. Contractor to provide rigid laminated engraved plastic nameplate for all signal terminal cabinets, fire alarm terminal cans, electrical disconnect switches (fused or non-fused) and data/voice cabinets. Provide and secure as noted above.

#### 2.03 Fasteners

- A. Fasteners for securing equipment to walls, floors and the like shall be either hot-dip galvanized after fabrication or stainless steel.

#### 2.04 Finish Requirements

- A. **Equipment:** Refer to each electrical equipment section of these Specifications for painting requirements of equipment enclosures. Repair any final paint finish which has been damaged or is otherwise unsatisfactory, to the satisfaction of the Engineer.
- B. **Wiring System:** In finished areas, paint all exposed conduits, boxes and fittings to match the color of the surface to which they are affixed.

### **PART 3 EXECUTION**

#### 3.01 Workmanship

- A. Ensure that all equipment and materials fit properly in their installation.
- B. Perform any required work to correct improperly fit installation at no additional expense to the owner.
- C. All electrical equipment and materials shall be installed in a neat and workmanship manner in accordance with the NECA Standard of Installation Manual and Workmanship of the entire job shall be first class in every respect.

### 3.02 Equipment Installations

- A. Provide the required inserts, bolts and anchors, and securely attach all equipment and materials to their supports.
- B. Do all the cutting and patching necessary for the proper installation of work and repair any damage done.
- C. Earthquake restraints: all electrical equipment, including conduits over 2 inches in diameter, shall be braced or anchored to resist a horizontal force acting in any direction as per Title 24, part 2, table 16a-o, part 3.
- D. Structural work: All core drilling, bolt anchor insertion, or cutting of existing structural concrete shall be approved by a California registered structural consulting engineer prior to the execution of any construction. At all floor slabs and structural concrete walls to be drilled, cut or bolt anchors inserted, the contractor shall find and mark all reinforcing in both faces located by means of x-ray, pach-ometer, or prof-ometer. Submit sketch showing location of rebar and proposed cuts, cores, or bolt anchor locations for approval.

### 3.03 Field Tests

- A. Test shall be in accordance with Acceptance testing specifications issued by the National Electrical Testing Association (NETA).
- B. Perform equipment field tests and adjustments. Properly calibrate, adjust and operationally check all circuits and components, and demonstrate as ready for service. Make additional calibration and adjustments if it is determined later that the initial adjustments are not satisfactory for proper performance. Perform equipment field test for equipment where equipment field tests are specified in the equipment Specifications. Give sufficient notice to the Engineer prior to any test so that the tests may be witnessed.
- C. Provide instruments, other equipment and material required for the tests. These shall be of the type designed for the type of tests to be performed. Test instrument shall be calibrated by a recognized testing laboratory within three months prior to performing tests.
- D. Operational Tests: Operationally test all circuits to demonstrate that the circuits and equipment have been properly installed and adjusted and are ready for full-time service. Demonstrate the proper functioning of circuits in all modes of operation, including alarm conditions.
- E. Re-testing will be required for all unsatisfactory tests after the equipment or system has been repaired. Re-test all related equipment and systems if required by the Engineer. Repair and re-test equipment and systems which have been satisfactorily tested but later fail, until satisfactory performance is obtained.

- F. Maintain records of each test and submit five copies to the Engineer when testing is complete. All tests shall be witnessed by the Engineer. These records shall include:
1. Name of equipment tested.
  2. Date of report.
  3. Date of test.
  4. Description of test setup.
  5. Identification and rating of test equipment.
  6. Test results and data.
  7. Name of person performing test.
  8. Owner or Engineer's initials.
- G. Items requiring testing shall be as noted in the additional electrical sections of these specifications.

3.04 Cleaning Equipment

- A. Thoroughly clean all soiled surfaces of installed equipment and materials.

3.05 Painting of Equipment

- A. Factory Applied: Electrical equipment shall have factory applied painting system which shall, as a minimum, meet the requirements of NEMA ICS 6 corrosion-resistance test and the additional requirements specified in the technical section.
- B. Field Applied: Paint electrical equipment as required to match finish of adjacent surfaces.

3.06 Records

- A. Maintain one copy of the contract Drawing Sheets on the site of the work for recording the "as built" condition. After completion of the work, the Contractor shall carefully mark the work as actually constructed, revising, deleting and adding to the Drawing Sheets as required. The following requirements shall be complied with:
1. Cable Size and Type: Provide the size and type of each cable installed on project.
  2. Substructure: Where the location of all underground conduits, pull boxes, stub ups and etc. where are found to different than shown, carefully mark the correct location on the Drawings. Work shall be dimensioned from existing improvements.
  3. Size of all conduit runs.
  4. Routes of concealed conduit runs and conduit runs below grade.
  5. Homerun points of all branch circuit.



6. Location of all switchgear, panels, MCC, lighting control panels, pullcans, etc.
7. Changes made as a result of all approved change orders, addendums, or field authorized revisions.
8. As BUILT: At the completion of the Work the Contractor shall review, certify, correct and turn over the marked up Drawings to the Engineer for his use in preparing "as built" plans.
9. As Built drawings for fire alarm, data, telephone, CATV/Video, intercom and clock shall also be recorded. Upon completion "As-built" documentation showing actual devices locations and devices identification as installed and labeled, including fire alarm, data, telephone, CATV/Video and int/clock wiring layout. "As-built" shall include; for example, fire alarm equipment location showing all monitor modules and end of line resistor locations. The contractor shall provide one set drawings documents and the other set in electronic CAD file representing actual as-builts. CAD files shall be AutoCAD 14 format. Obtaining CAD files from the Engineer/District shall require contractor to sign CAD release form.
10. As built Drawings shall be delivered to the Engineer within ten (10) days of completion of construction.

### 3.07 Clean Up

- A. Upon completion of electrical work, remove all surplus materials, rubbish, and debris that accumulated during the construction work. Leave the entire area neat, clean, and acceptable to the Engineer.

### 3.08 Mechanical and Plumbing Electrical Work

- A. The requirements for electrical power and/or devices for all mechanical and plumbing equipment supplied and/or installed under this Contract shall be coordinated and verified with the following:
  1. Mechanical and Plumbing Drawings.
  2. Mechanical and Plumbing sections of these Specifications.
  3. Manufacturers of the Mechanical and Plumbing equipment supplied.
- B. The coordination and verification shall include the voltage, ampacity, phase, location and type of disconnect, control, and connection required. Any changes that are required as a result of this coordination and verification shall be a part of this Contract.
- C. The Electrical Contractor shall furnish and install the following for all mechanical and plumbing equipment:
  1. Line voltage conduit and wiring.
  2. Disconnect switches.

3. Manual line voltage controls.

- D. Automatic line voltage controls and magnetic starters unless otherwise noted, shall be furnished by the Mechanical and/or Plumbing Contractor and installed and connected by the Electrical Contractor. All line voltage control wiring installed by the Electrical Contractor shall be done per directions from the Mechanical and/or Plumbing Contractor.
- E. All low voltage control wiring for Mechanical and Plumbing equipment shall be installed in conduit. Furnishing, installation and connection of all low voltage conduits, boxes, wiring and controls shall be by the Mechanical and/or Plumbing Contractor.
- F. Manual motor starters, where required, shall have toggle type operators with pilot light and melting alloy type overload relays, SQUARE D COMPANY, Class 2510, Type FG-1P (surface) or Type FS-1P (flush) or ITE, WESTINGHOUSE or GENERAL ELECTRIC equal.

3.09 Access Doors

- A. The Electrical Contractor shall furnish and install access doors wherever required whether shown or not for easy maintenance of electrical systems: As an example, fire alarm devices, controls, junction boxes, etc. Access doors shall provide for complete access to equipment for both removal and replacement of equipment.

END OF SECTION

SECTION 26 05 11

**ELECTRICAL DEMOLITION**

**PART 1 GENERAL**

1.01 Description of Work

- A. General - Remove all material designated to be removed on the drawings and that is surplus to the needs of the system as may be designated by the Owner's Representative. Specific work shall be provided as specified below:
- B. Remove Existing Equipment - Electrical Equipment to be removed shall include but not be limited to switchboards, panel boards, concrete foundations, equipment supports, lighting fixtures, conductors, conduit, raceway and other items as shown on the drawings or specified.
- C. Clean Surface Areas - Clean all floors, streets, sidewalks, driveways, parking lots and landscaped areas of all trash and debris deposited as a result of the work. Clean daily and maintain the property free of trash and debris.

1.02 Standards and Codes

- A. Work and material shall be in compliance with and according to the requirements of the latest revision of the following standards and codes.
  - 1. California Electrical Code (CEC).

**PART 2 PRODUCTS**

NOT USED

**PART 3 EXECUTION**

3.01 Disposal

- A. Except where specifically noted otherwise on the drawings or elsewhere in these specifications, the contractor assumes ownership of all material removed from the project site and assumes all responsibility for its proper disposal.

3.02 Cleanup

- A. Contractor shall maintain the work site in a neat and orderly state. Contractor shall remove demolition material from the job site daily. No demolition material shall be left on the job site after working hours without written approval from the Owner's Representative.

END OF SECTION

SECTION 26 05 19

**LOW VOLTAGE WIRE AND CABLE**

**PART 1 GENERAL**

1.01 Description of Work:

- A. The work of this Section consists of providing all wire and cable rated 600 volts or less, including splices and terminations, as shown on the Drawings and as described herein.

1.02 Related Work:

- A. See the following Specification Section for work related to the work in this Section:
  - 1. Section 26 05 33 - Conduits, Raceways and Fittings.
  - 2. Section 26 05 34 - Junction and Pull Boxes.

1.03 Submittals:

- A. In accordance with Specification Section 26 05 10.1.03.A.
- B. Provide single submittal of complete material list with the manufacturer's specifications and published descriptive literature for all materials proposed for use.

1.04 Quality Assurance

- A. Field tests shall be performed as specified in paragraph 3.04 of this Section.

**PART 2 PRODUCTS**

2.01 Conductors:

- A. Conductors shall be copper, type THHN/THWN/MTW oil and gasoline resistant, 600 volt rated insulation. Minimum power and control wire size shall be No. 12 AWG unless otherwise noted.
- B. Conductors shall be stranded except that sizes #10 and smaller for receptacle circuits shall be solid and of the sizes indicated.
- C. Minimum power and control wire size shall be No. 12 AWG unless otherwise noted.
- D. All conductors used on this Project shall be of the same type and conductor material.

2.02 Cables:

- A. All individual conductors shall be copper with type THHN/THWN, 600 volt rated insulation.
- B. Insulation Marking - All insulated conductors shall be identified with printing colored to contrast with the insulation color.
- C. Color Coding - As specified in paragraph 3.03.

- D. Special Wiring - Where special wiring is proposed by an equipment manufacturer, submit the special wiring requirements to the Owner's Representative and, if approved, provide same. Special wire shall be the type required by the equipment manufacturer.
- E. Other Wiring - Wire or cable not specifically shown on the Drawings or specified, but required, shall be of the type and size required for the application and as approved by the Owner's Representative.
- F. Manufacturer - Acceptable manufacturers including Cablec, Southwire, or equal.

2.03 Terminations:

- A. Manufacturer - Terminals as manufactured by T&B, Burndy or equal.
- B. Cable Termination for Copper - Crimp style two hole NEMA spade terminals designed and rated for copper cable.
- C. Wire Terminations - Crimp on ring-tongue terminals, insulated sleeve, of proper size for the wire used.
- D. End Seals - Heat shrink plastic caps of proper size for the wire on which used.

2.04 Tape:

- A. Tape used for terminations and cable marking shall be compatible with the insulation and jacket of the cable and shall be of plastic material.

**PART 3 EXECUTION**

3.01 Cable Installation:

- A. Clean Raceways - Clean all raceways prior to installation of cables as specified in Section 26 05 33 - Conduits Raceway and Fittings.
- B. Cable Pulling - Exercise care in pulling wires and cables into conduit or wireways so as to avoid kinking, putting undue stress on the cables or otherwise abrading them. No grease will be permitted in pulling cables. Only soapstone, talc, or UL listed pulling compound will be permitted. The raceway construction shall be complete and protected from the weather before cable is pulled into it. Swab conduits before installing cables and exercise care in pulling, to avoid damage to conductors.
- C. Bending Radius - Cable bending radius shall be per applicable code. Install feeder cables in one continuous length.
- D. Equipment Grounding Conductors - Provide an equipment grounding conductor, whether or not it is shown on the Drawings, in all conduits or all raceways.
- E. Panelboard Wiring - In panels, bundle incoming wire and cables which are No. 6 AWG and smaller, lace at intervals not greater than 6 inches, neatly spread into trees and connect to their respective terminals. Allow sufficient slack in cables for alterations in terminal connections. Perform lacing with plastic cable ties or linen lacing twine. Where plastic panel wiring duct is provided for cable runs, lacing is not necessary when the cable is properly installed in the duct.
- F. Provide #10awg conductors for all 20 amp 120v branch circuits over 100 feet.

3.02 Cable Terminations and Splices:

- A. Splices - UL Listed wirenuts.
- B. Terminations - Shall comply with the following:
  - 1. Make up and form cable and orient terminals to minimize cable strain and stress on device being terminated on.
  - 2. Burnish oxide from conductor prior to inserting in oxide breaking compound filled terminal.

3.03 Circuit and Conductor Identification:

- A. Color Coding - Provide color coding for all circuit conductors. Insulation color shall be white for neutrals and green for grounding conductors. Ungrounded conductor colors shall be as follows:

<u>VOLTAGE</u>	<u>208/120V</u>	<u>480/277V</u>
Phase A	Black	Brown
Phase B	Red	Orange
Phase C	Blue	Yellow
Neutral	White	Grey
Ground	Green	Green

- B. Color coding shall be in the conductor insulation for all conductors #10 AWG and smaller; for larger conductors, color shall be either in the insulation or in colored plastic tape applied at every location where the conductor is readily accessible.
- C. Circuit Identification - All underground distribution and service circuits shall be provided with plastic identification tags in each secondary box and at each termination. Tags shall identify the source panel and transformer of the circuit and the building number(s) serviced by the circuit.

3.04 Field Tests:

- A. All systems shall test free from short circuits and grounds, shall be free from mechanical and electrical defects, and shall show an insulation resistance between phase conductors and ground of not less than the requirements of the CEC. All circuits shall be tested for proper neutral connections.
- B. Cables are required to have a megger testing completed with a report of results submitted to the Engineer for approval.

END OF SECTION

SECTION 26 05 26

**GROUNDING**

**PART 1 GENERAL**

1.01 Description of Work

- A. The work of this section consists of furnishing, installing, connection and testing of all grounding systems as specified herein and as shown on the Drawings.

1.02 Related Work

- A. See the following specification sections for work related to work in this section.
  - 1. Section 26 05 10- Electrical General Requirements.
  - 2. Section 26 05 19- Low Voltage Wire and Cable

1.03 Submittals: In accordance with Section 26 05 10 Submittals.

- A. Submit manufacturer's literature for review.
- B. Provide single submittal of complete material list with the manufacturer's specifications and published descriptive literature for all materials proposed for use.

1.04 Standards and Codes

- A. American Society for Testing and Materials (ASTM) Publication:
  - 1. B8-1986, Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft.
  - 2. B228-1988, Copper Clad Steel Conductors Specification.
- B. The latest editions following applicable codes:
  - 1. California Electrical Code (CEC).
  - 2. Occupational Safety and Health Act (OSHA) standards.
  - 3. All applicable local codes, rules and regulations.

1.05 Quality Assurance

- A. Each and every concealed connection must be inspected by the Owner's Representative before it is covered up by the Contractor.

**PART 2 PRODUCTS**

2.01 General

- A. The grounding system shall consist of the grounding conductors, ground bus, ground fittings and clamps, and bonding conductors as shown on the Drawings and as required by codes and local authorities.

## 2.02 System Components

- A. Ground Rods: Ground rods shall be cone pointed copper clad Grade 40 HS steel rods conforming to ASTM B228. The welded copper encased steel rod shall have a conductivity of not less than 27% of pure copper. Rods shall be not less than 3/4-inch in diameter and ten feet long, unless otherwise indicated. Rods longer than ten feet shall be made up of ten foot units joined together with threaded couplings. The manufacturer's trademark shall be stamped near the top.
- B. Ground Conductors: Buried conductors shall be medium-hard drawn bare copper; other conductors shall be soft drawn copper. Sizes over No. 6 AWG shall be stranded conforming to ASTM B8. In all conduit runs, a green insulated copper ground wire, sized to comply with codes, shall be installed.
- C. Ground Connections: Exposed ground connections shall be high copper alloy bolted pressure types or exothermically welded type as notes. Buried connections shall be either exothermically welded type or approved compression types for connection of copper to copper or copper to steel, as required. Lug for attachment of cables to steel enclosures shall be of the binding post type with a 1/2-13NC stud. Each post shall accommodate cables from #4 AWG to #2/0 AWG.
- D. Ground Rod Boxes: Boxes shall be nine-inch diameter precast concrete units with cast iron traffic covers. Units shall be 12 inches deep. Covers shall be embossed with the wording "Ground Rod".
- E. Ground Bus: 2" x 1/4" x (length as specified on drawings) copper busbar. Provide isolation stand off bushings. Provide drilled and tapped 3/8" diameter holes on 2 foot centers. Provide "ALCU" lugs and bronze bolts. Connect busbar to main grounding system and bond to metallic domestic cold water pipe with #8 ground conductor.

## PART 3 EXECUTION

### 3.01 Installation

- A. Ground all equipment, including, but not limited to, panel boards, terminal cabinets and outlet boxes, for which a ground connection is required per the NEC, even though not specifically shown on the Drawings.
- B. The ground pole of receptacles shall be connected to their outlet boxes by means of a copper ground wire connecting to a screw in the back of the box.
- C. Provide a ground rod box for each ground rod so as to permit ready access for the connection and/or removal of any pressure connectors to facilitate testing.
- D. Where ground rods must be driven to depths over ten feet, increase rod diameter used, sufficiently to prevent the rod from bending or being damaged.
- E. Make embedded or buried ground connections, taps and splices with exothermically welded connections or approved compression type connectors.



- F. Make connections of grounding conductors to equipment ground buses and enclosures using binding post type connectors.
- G. Effectively bond structural steel for buildings to the grounding system, "UFER" ground.
- H. Install a ground rod in each primary handhole. Connect the ground conductor installed for each primary duct bank to the ground rod in each handhole. Bond metal conduits to handhole ground rod.

3.02 Testing

- A. Conduct ground resistance tests using a ground resistance tester with a scale reading of 25 ohms maximum.
- B. Test methods shall conform to IEEE Standard 81 using the three electrode method. Conduct test only after a period of not less than 48 hours of dry weather.
- C. Take resistance readings for each ground rod individually and for each system as a whole without benefit of chemical treatment or other artificial means. Ground resistance readings shall not exceed 25 ohms. If readings are not to the Contracting Officer's approval, provide lengthened or additional ground rods (maximum of two additional rods).
- D. Furnish to the Owner's Representative a test report with recorded data of each ground rod location and each system.

END OF SECTION

SECTION 26 05 33

**CONDUITS, RACEWAYS AND FITTINGS**

**PART 1 GENERAL**

1.01 Description of Work

- A. The work of this section consists of furnishing and installing conduits, raceways and fittings as shown on the Drawings and as described herein.

1.02 Related Work

- A. See the following specification sections for work related to the work in this section:
  - 1. Section 26 05 35 - Underground Ducts.
  - 2. Section 26 05 19 - Low Voltage Wire and Cable.
  - 3. Section 26 05 34 - Junction and Pull Boxes

1.03 Submittals

- A. As specified in Division 1.
  - 1. Catalog Data: Provide manufacturer's descriptive literature.
  - 2. Single Submittal: A single complete submittal is required for all products covered by this Section.

**PART 2 PRODUCTS**

2.01 Conduits, Raceways

- A. Electrical Metallic Tubing (EMT) shall be hot-dip galvanized after fabrication. Couplings shall be compression or setscrew type.
- B. Flexible Conduit: Flexible metal conduit shall be galvanized steel.
- C. Liquid Tight Flexible Metal Conduit (LFMC) shall be galvanized steel strip helically wound with nylon sealing cord with smooth surface flexible PVC covering.
- D. Galvanized Rigid Steel Conduit (GRS) shall be hot-dip galvanized after fabrication. Couplings shall be threaded type.
- E. Rigid Non-metallic Conduit: Rigid non-metallic conduit shall be PVC Schedule 40 (PVC-40) or NEMA Type EPC-40) conduit approved for underground use and for use with 90°C wires.
- F. The use of "MC Cable shall not be permitted without written approval.

2.02 Conduit Supports

- A. Supports for individual conduits shall be galvanized malleable iron one-hole type with conduit back spacer.
- B. Supports for multiple conduits shall be hot-dipped galvanized Unistrut or Superstrut channels, or approved equal. All associated hardware shall be hot-dip galvanized.
- C. Supports for EMT conduits shall be galvanized pressed steel single hole straps.
- D. Clamp fasteners shall be by wedge anchors. Shot in anchors shall not be allowed.

2.03 Fittings

- A. Provide threaded-type couplings and connectors for rigid steel conduits. Provide compression (watertight) steel type (die-cast zinc or malleable iron type fittings not allowed), or setscrew type for EMT. Provide threaded couplings and Meyers hubs for rigid steel conduit exposed to weather.
- B. Fittings for flexible conduit shall be Appleton, Chicago, IL, Type ST, O-Z Gedney Series 4Q by General Signal Corp., Terryville, CT, T & B 5300 series, or approved equal.
- C. Fittings for liquid tight flexible metal conduit shall be by Appleton, O-Z Gedney or Thomas and Betts. Fittings shall be zinc plated malleable iron or aluminum.
- D. Fittings for use with rigid steel shall be galvanized steel or galvanized cast ferrous metal; access fittings shall have gasketed cast covers and be Crouse Hinds Condulets, Syracuse, NY, Appleton Unilets, Chicago, IL, or approved equal. Provide threaded-type couplings and connectors; setscrew type and compression-type are not acceptable.
- E. Fittings for use with rigid non-metallic conduit shall be PVC and have solvent-weld-type conduit connections.
- F. Union couplings for conduits shall be the Erickson type and shall be Appleton, Chicago, IL, Type EC, O-Z Gedney 3-piece Series 4 by General Signal Corp., Terryville, CT, or approved equal. Threadless coupling shall not be used.
- G. Bushings
  - 1. Bushings shall be the insulated type.
  - 2. Bushings for rigid steel shall be insulated grounding type, O-Z Gedney Type HBLG, Appleton Type GIB, or approved equal.
- H. Conduit Sealants
  - 1. Fire Retardant Types: Fire stop material shall be reusable, non-toxic, asbestos-free, expanding, putty type material with a 3-hour rating in accordance with UL Classification 35L4 or as specified on the Drawings.

### **PART 3 EXECUTION**

#### **3.01 Conduit, Raceway and Fitting Installation**

- A. For conduit runs exposed to weather provide rigid metal (GRS).
- B. For conduit run underground, in concrete or masonry block walls and under concrete slabs, install minimum 3/4" size nonmetallic (PVC) with PVC elbows. Where conduits transition from underground or under slab to above grade install wrapped rigid metal (GRS) elbows and risers.
- C. For conduit runs concealed in steel or wood framed walls or in ceiling spaces or exposed in interior spaces above six feet over the finished floor, install EMT.
- D. Interior conduits installed exposed on the wall below six feet shall be galvanized rigid steel (GRS).
- E. Flexible metal conduit shall be used only for the connection of recessed lighting fixtures and motor connections unless otherwise noted on the Drawings. Liquid-tight steel flexible conduit shall be used for motor connections.
- F. The minimum size raceway shall be 3/4-inch unless indicated otherwise on the Drawings.
- G. Installation shall comply with the CEC.

- H. From pull point to pull point, the sum of the angles of all of the bends and offset shall not exceed 270 degrees.
- I. Conduit Supports: Properly support all conduits as required by the NEC. Run all conduits concealed except where otherwise shown on the drawings.
  - 1. Exposed Conduits: Support exposed conduits within three feet of any equipment or device and at intervals not exceeding NEC requirements; wherever possible, group conduits together and support on common supports. Support exposed conduits fastened to the surface of the concrete structure by one-hole clamps, or with channels. Use conduit spacers with one-hole clamps.
    - a. Conduits attached to walls or columns shall be as unobtrusive as possible and shall avoid windows. Run all exposed conduits parallel or at right angles to building lines.
    - b. Group exposed conduits together. Arrange such conduits uniformly and neatly.
  - 2. Support all conduits within three feet of any junction box, coupling, bind or fixture.
  - 3. Support conduit risers in shafts with Unistrut Superstrut, or approved equal, channels and straps.
- H. Moisture Seals: Provide in accordance with NEC paragraphs 230-8 and 300-5(g).
- I. Where PVC conduit transitions from underground to above grade, provide rigid steel 90's with risers. Rigid steel shall be half-lap wrapped with 20-mil tape and extend minimum 12" above grade.
- J. Provide a nylon pull cord in each empty raceway.
- K. Provide galvanized rigid steel factory fittings for galvanized rigid steel conduit.
- L. Slope all underground raceways to provide drainage; for example, slope conduit from equipment located inside a building to the pull box or manhole located outside the building.
- M. Conduits shall be blown out and swabbed prior to pulling wires.

END OF SECTION

SECTION 26 05 34

**JUNCTION AND PULL BOXES**

**PART 1 GENERAL**

1.01 Description of Work:

- A. The work of this Section consists of providing all required labor, supervision, materials and equipment to satisfactorily complete all electrical installations shown on the drawings, included in these Specification, or otherwise needed for a complete and fully operating facility. The work shall include but not be limited to the following:
- B. Furnish and install all required material, supports and miscellaneous material for the satisfactory interconnection of all associated electrical systems.

1.02 Related Work:

- A. See the following specification sections for work related to the work of this section.
  - 1. Section 26 05 10 - General Electrical Requirements.
  - 2. Section 26 05 33 - Conduits, Raceway and Fittings.
  - 3. Section 26 05 19 - Low Voltage Wire and Cable.

1.03 Standards and Codes:

- A. Submit in accordance with the requirements of Section 26 05 10: General Electrical Requirements.

1.04 Submittals:

- A. Provide single submittal of complete material list with the manufacturer's specifications and published descriptive literature for all materials proposed for use.

**PART 2 PRODUCTS**

2.01 Outlet boxes, Junction and Pull boxes

- A. Standard Outlet Boxes: Galvanized, one-piece die formed or drawn steel, knock-out type of size and configuration best suited to the application indicated on the Drawings. Minimum box size shall be 4 inches square by 1-1/2 inches deep with mud rings as required.
- B. Switch boxes: Minimum box size shall be 4 inches square by 1-1/2 inches deep with mud rings as required. Install multiple switches in standard gang boxes with raised device covers suitable for the application indicated.
- C. Conduit bodies: Cadmium plated, cast iron alloy. Conduit bodies with threaded conduit hubs and neoprene gasketed, cast iron covers. Bodies shall be used to facilitate pulling of controls or to make changes in conduit direction only. Splices are not permitted in conduit bodies. Crouse-Hinds Form 8 Condulets, Appleton Form 35 Unilets or equal.

- D. Sheet Metal Boxes: Use standard outlet or concrete ring boxes wherever possible; otherwise use a minimum 16 gauge galvanized sheet metal, NEMA 1 box sized to Code requirements with covers secured by cadmium plated machine screws located six inches on centers. Circle AW Products, Hoffman Engineering Company or equal.
- E. Flush Mounted Pull boxes and Junction boxes: Provide overlapping covers with flush head cover retaining screws, prime coated.

**PART 3 EXECUTION**

**3.01 Outlet Boxes**

**A. General:**

- 1. All outlet boxes shall finish flush with building walls, ceilings and floors except in mechanical and electrical rooms above accessible ceiling or where exposed work is called for on the Drawings.
- 2. Install raised device covers (plaster rings) on all switch and receptacle outlet boxes installed in masonry or stud walls or in furred, suspended or exposed concrete ceilings. Covers shall be of a depth to suit the wall or ceiling finish.
- 3. Leave no unused openings in any box. Install close-up plugs as required to seal openings.

**B. Box Layout:**

- 1. Outlet boxes shall be installed at the locations and elevations shown on the drawings or specified herein. Make adjustments to locations as required by structural conditions and to suit coordination requirements of other trades.
- 2. Locate switch outlet boxes on the latch side of doorways.
- 3. Outlet boxes shall not be installed back to back nor shall through-wall boxes be permitted.
- 4. For outlets mounted above counters, benches or backsplashes, coordinate location and mounting heights with built-in units. Adjust mounting height to agree with required location for equipment served.

**C. Supports:**

- 1. Outlet Boxes installed in metal stud walls shall be equipped with brackets designed for attaching directly to the studs or shall be mounted on specified box supports.
- 2. Fixture outlet boxes installed in suspended ceiling of gypsum board or lath and plaster construction shall be mounted to 16 gauge metal channel bars attached to main ceiling runners.
- 3. Fixture outlet boxes installed in suspended ceilings supporting acoustical tiles or panels shall be supported directly from the structure above where pendant mounted lighting fixture are to be installed on the box.

4. Fixture Boxes above tile ceilings having exposed suspension systems shall be supported directly from the structure above.
5. Outlet and / or junction boxes shall not be supported by grid or fixture hanger wires at any locations.

### 3.02 JUNCTION AND PULL BOXES

#### A. General:

1. Install junction or pull boxes where required to limit bends in conduit runs to not more than 360 degrees or where pulling tension achieved would exceed the maximum allowable for the cable to be installed. Note that these boxes are not shown on the Drawings.
2. Locate pull boxes and junction boxes in concealed locations above removable ceilings or exposed in electrical rooms, utility rooms or storage areas.
3. Install raised covers (plaster rings) on boxes in stud walls or in furred, suspended or exposed concrete ceilings. Covers shall be of a depth to suit the wall or ceiling finish.
4. Leave no unused openings in any box. Install close-up plugs as required to seal openings.
5. Identify circuit numbers and panel on cover of junction box with black marker pen.

#### B. Box Layouts:

1. Boxes above hung ceilings having concealed suspension systems shall be located adjacent to openings for removable recessed lighting fixtures.

#### C. Supports:

1. Boxes installed in metal stud walls shall be equipped with brackets designed for attaching directly to the studs or shall be mounted on specified box supports.
2. Boxes installed in suspended ceilings of gypsum board or lath and plaster construction shall be mounted to 16 gauge metal channel bars attached to main ceiling runners.
3. Boxes installed in suspended ceilings supporting acoustical tiles or panels shall be supported directly from the structure above.
4. Boxes mounted above suspended acoustical tile ceilings having exposed suspension systems shall be supported directly from the structure above.

END OF SECTION

SECTION 26 05 35

**UNDERGROUND DUCTS**

**PART 1 GENERAL**

1.01 Description of Work:

- A. The work of this section consists of furnishing and installing raceways, raceway spacers and encasing material with necessary excavation for underground ducts.
- B. Encasement - Encasement shall be sand for all other raceways.
- C. Where required - All raceways, where run underground in an excavation shall be installed in compliance with the requirements of this Section. Conduits run underground without encasement shall be as indicated in the Drawings.

1.02 Related Work:

- A. See the following specification sections for work related to the work of this section.
  - 1. Section 26 05 33 - Conduit Raceway and Fittings

1.03 Standards and Codes:

- A. Work and material shall be in compliance with and according to the requirements of the latest revision of the following standards and codes.
- B. National Fire Protection Association (NFPA), National Electrical Code (NEC) - Latest Revision:
  - 1. Underground Installations NEC - Article 300
  - 2. Rigid Nonmetallic Conduit NEC - Article 347
- C. California Electrical Code (CEC).
- D. Construction of Underground Electric Supply and Communication Systems, State of California Public Utilities Commission, General Order No. 128.

1.04 Submittals:

- A. As specified in Division 1 and Section 26 05 10.
- B. Catalog Data: Provide manufacturer's descriptive literature.
- C. Single Submittal: A single complete submittal is required for all products covered by this Section.

**PART 2 PRODUCTS**

2.01 Raceways:

- A. As specified in Section 26 05 33 Conduits, Raceways and Fittings.

2.02 Spacers:

- A. Molded plastic as furnished by the raceway manufacturer, to cradle and position the raceways in the excavation for placing the encasement.
- B. Shape to accurately fit the raceway, provide the correct raceway spacing, to interlock in place and stack.



**PART 3            EXECUTION**

3.01    Raceway:

- A.        Install raceways in spacers. Spacers installed at intervals of five feet and within one inch each side of all bends and joints.
- B.        Solvent weld connections.

END OF SECTION

SECTION 26 05 44

**IN GRADE PULL BOXES**

**PART 1 GENERAL**

1.01 Description of Work:

- A. The work of this section consists of providing all labor, supervision, tools, materials, and performing all work necessary to furnish and install pre-cast concrete vaults, and pull boxes with necessary excavation.

1.02 Related Work:

- A. See the following specification sections for work related to the work of this section.
  - 1. 31 23 00 Excavation and Backfill.
  - 2. 32 13 13 Portland Cement Concrete.
  - 3. 26 05 43 Underground Ducts.

1.03 Standards and Codes:

- A. Work and material shall be in compliance with and according to the requirements of the latest revision of the following standards and codes.
  - 1. National Fire Protection Association (NFPA), National Electrical Code (NEC) - Latest Revision.
  - 2. California Electrical Code (CEC).
  - 3. American Society for Testing and Materials (ASTM):
    - a. A 185 - Welded Steel Wire Fabric for Concrete Reinforcement.
    - b. A 615 - Deformed and Plain Billet - Steel Bars for Concrete Reinforcement.
    - c. C 33 - Concrete Aggregates.
    - d. C 478 - Pre-cast Reinforced Concrete Vault Sections, Specification for.

1.04 Submittals:

- A. In accordance with Specification Section 26 05 10.1.03.A.
- B. Provide single submittal of complete material list with the manufacturer's specifications and published descriptive literature for all materials proposed for use.

**PART 2 PRODUCTS**

2.01 Materials and Equipment:

- A. General Requirements:
  - 1. Concrete vaults and pull boxes for electrical power, controls and other communication circuits shall consist of pre-cast reinforced concrete boxes, extensions' bases, and covers as specified herein and as indicated on the Drawings. Pre-cast units shall be the product of a manufacturer regularly engaged in the manufacture of pre-cast vaults and pull boxes. Acceptable manufacturers are Christy, Utility Vault, Brooks, Associated Concrete or equal.
- B. Construction:

1. Pre-cast concrete vaults and pull boxes for electrical power distribution and communication circuits with associated risers and tops shall conform to ASTM C478 and ACI 318. Vaults and pull boxes shall be the type noted on the Drawings and shall be constructed in accordance with the applicable details as shown. Tops, walls and bottoms shall consist of reinforced concrete. Walls and bottom shall be of monolithic concrete construction. Duct entrances and windows shall be located near the corners of structures to facilitate cable racking. Provide all necessary lugs, rabbets, and brackets. Set pulling-in irons and other built-in items in place prior to pouring concrete. A pulling-in iron shall be installed in the wall opposite each duct entrance. All steel other than "rebar" shall be hot dipped galvanized after fabrication.
- C. Cable Racks:
1. Vaults shall be provided with galvanized cable racks, including rack arms and insulators, and shall be adequate to accommodate the indicated cables; porcelain insulators shall be provided for electrical vaults only.
- D. Covers:
1. The word "ELECTRICAL" shall be cast in the top face of all electrical power vault and cable boxes.
  2. The words "FIRE ALARM" shall be cast in the top face of all fire alarm vault and cable boxes.
  3. The word "SIGNAL" shall be cast in the top face of all telecom, intercom, CATV, data, EMS, security and/or clock vault and cable boxes.
- E. Sumps:
1. Where indicated on the drawings, drain sumps shall be provided.
- F. Concrete:
1. Aggregates used in the concrete mix, either coarse or fine, excluding light weight aggregates, shall conform to ASTM C 33. Aggregates shall be properly graded and free of deleterious substances to produce a homogeneous concrete mix when blended with cement.
- G. Cement:
1. The cement shall be Type II low alkali Portland cement and shall meet the requirement of ASTM C 150.
- H. Compressive Strength:
1. Sufficient cement content shall be used per batch to produce a minimum compressive strength of 3,000 psi at 28 days.
- I. Reinforcing Steel:
1. Welded wire mesh for street lighting boxes shall conform to ASTM A 185.
  2. Reinforcing bars for primary and secondary electrical vaults and pull boxes, and communication vaults and pull boxes shall be intermediate grade billet steel conforming to ASTM A 615.
- J. Ladders:
1. Ladders for vaults shall be sized as required, stationary galvanized steel.

**PART 3 EXECUTION**

3.01 Installation:

- A. Pre-cast vaults and pull boxes shall be installed approximately where indicated on the Drawings. The exact location of each vault or pull box shall be determined after careful consideration has been given to the location of other utilities, grading, and paving. All vaults, cable boxes and secondary pull boxes shall be installed with a minimum of 6-inch thick crushed rock or sand bedding.
- B. Paved areas:
  - 1. Vaults and pull boxes located in areas to be paved shall be installed such that the top of the cover shall be flush with the finished surface of the paving.
- C. Unpaved Areas:
  - 1. In unpaved areas, the top of vaults and pull box covers shall be approximately 2 inches above finished grade.
- D. Joint Seals:
  - 1. Section joints of pre-cast vaults and pull boxes shall be sealed with compound as recommended by the manufacturer.
- E. Trenching, Backfilling, and Compaction:
  - 1. Trenching, backfilling and compaction shall be as specified in Section 02200 - Excavation and Backfill.
- F. Grounding:
  - 1. Ground rods and associated copper ground loop shall be installed in all vaults. Ground loop shall be properly connected to the cable shielding, at each cable joint or splice by means of a minimum number 4 AWG or equivalent braided tinned copper wire. Ground rods shall be protected with a double wrapping of pressure-sensitive plastic tape for a distance of two inches above and six inches below concrete penetrations. Ground wires shall be neatly and firmly attached to vault cable support racks.

END OF SECTION

SECTION 26 24 16

**PANELBOARDS AND DISTRIBUTION PANELS**

**PART 1 GENERAL**

1.01 Description of Work:

- A. The work of this Section consists of providing panelboards and circuit breakers as shown on the Drawings and as described herein.

1.02 Related Work:

- A. See the following specification sections for work related to the work in this Section.
  1. Section 26 05 10 - General Electrical Requirements
  2. Section 26 05 26 - Grounding
  3. Section 26 05 19 - Line Voltage Wire and Cable
  4. Section 26 28 16 - Circuit Breakers

1.03 Submittals:

- A. Shop Drawings - As specified in Division 1 and Section 26 05 10. For each panelboard and distribution panels furnished under this Contract, submit manufacturer's name, catalog data, and the following information:
  1. Panelboard / distribution panel type.
  2. Main bus and terminal connection sizes.
  3. Location of line connections.
  4. Cabinet dimension.
  5. Gutter space.
  6. Gauge of boxes and fronts.
  7. Finish data.
  8. Voltage rating.
  9. Breaker manufacturer, types, trip rating, and interrupting ratings.
  10. When information is available on the Drawings, show breaker circuit numbers and locations along with trip ratings on a panelboard layout.
- B. Single Submittal - A single complete submittal is required for all products covered by this Section.
- C. Closeout Submittals: Submit operation and maintenance data for panelboards and circuit breakers including nameplate data, parts lists, factory and field-test reports, recommended maintenance procedures and typewritten as-built panel schedules. Submit in accordance with Division 1.

1.04 Warranty

- A. Manufacturer shall warrant specified equipment free from defects in materials and workmanship for the lesser of one (1) year from the date of installation or eighteen (18) months from the date of purchase.

## **PART 2 PRODUCTS**

### **2.01 Panelboards:**

- A. General: Lighting and Receptacle Panelboards shall be the automatic circuit breaker type. The number and arrangement of circuits, trip ratings, spares and blank spaces for future circuit breakers shall be as shown on the Drawings or, if not shown, 42 circuits. All circuit breakers shall be quick-make, quick-break, thermal-magnetic bolt-on type, with 1, 2 or 3 poles as shown, each with a single operating handle. Tandem or piggyback breakers shall not be used.
- B. Nameplates:
  - 1. Each panelboard shall have a field mounted identifying, rigid, plastic nameplate giving the panel identification as shown on the Drawings. Nameplates shall be laminated with black characters minimum 3/16" high on a white laminated background. Nameplates shall be attached with screws.
  - 2. Each panelboard shall have a manufacturer's nameplate showing the voltage, bus rating, number of phases, frequency and number of wires.
- C. Construction:
  - 1. Door and trim shall be finished to match color of surrounding wall. Box shall be hot-dip galvanized, field finished to match the front.
  - 2. Panelboards and enclosures shall conform to requirements of all relevant codes. Panelboards shall be suitable for use as service equipment.
  - 3. Panelboards shall be furnished with door-in-door or hinged trim fronts with key latch, on inner door and a typed directory card and holder. Panelboard circuits shall be arranged with odd numbers on the left and even numbers on the right. Provide weatherproof, NEMA type 3R enclosures for outdoor installation.
- D. Busbars: Panelboard busbars shall be phase sequence type suitable for bolt-on circuit breakers. All busbars shall be copper. Panelboard bus current ratings shall be determined by heat-rise tests conducted in accordance with UL 67.
  - 1. Busbars shall be braced for the indicated short circuit level scheduled.
  - 2. Busbars shall be installed completely throughout the panel for installation of both required and future breakers. Schedules indicate spaces for future breakers.
  - 3. Busbars shall be designed so circuit breakers may be changed without machining, drilling or tapping.
  - 4. Separate isolated Neutral and Ground busbars shall be provided. If called for on panel schedules, Neutral busbar may be oversized. Ground busbar shall be identified with green stripe and fully bonded to enclosure.
- E. Circuit Breakers: Circuit breakers shall be the molded case type with trip and interrupting ratings as shown on the Drawings.
- F. Series ratings shall not be allowed unless specifically noted on drawings.
- G. Typed Circuit Directories: All panelboards shall have typed directories identifying all circuits installed behind plastic cover provided by the panelboard manufacturer.
- H. Manufacturer:
  - 1. Panelboards shall be Square D, Siemens or approved equal.

### **2.02 Distribution Panels:**

- A. General: Distribution panels shall be the automatic circuit breaker type. The number and arrangement of circuits, trip ratings, spares and blank spaces for future circuit breakers shall be as shown on the Drawings. All circuit breakers shall be quick-make, quick-break, thermal-magnetic bolt-on type, with 1, 2 or 3 poles as shown, each with a single operating handle. Tandem or piggyback breakers shall not be used.
- B. Nameplates:
  - 1. Each distribution board shall have a field mounted identifying, rigid, plastic nameplate giving the panel identification as shown on the Drawings. Nameplates shall be laminated with black characters minimum 3/16" high on a white laminated background. Nameplates shall be attached with screws.
  - 2. Each distribution panel shall have a manufacturer's nameplate showing the voltage, bus rating, number of phases, frequency and number of wires.
- C. Construction:
  - 1. Door and trim shall be finished to match color of surrounding wall. Box shall be hot-dip galvanized, field finished to match the front.
  - 2. Distribution panels and enclosures shall conform to requirements of all relevant codes. Distribution panels shall be suitable for use as service.
  - 3. Distribution panels shall have a front door with key latch and a typed directory card and permanently attached holder. Adhesive backed holders are not acceptable. Distribution panel's circuits shall be arranged with odd numbers on the left and even numbers on the right. Provide weatherproof, NEMA type 3R enclosures for outdoor installation.
- D. Busbars: Distribution panel's busbars shall be phase sequence type suitable for bolt-on circuit breakers. All busbars shall be copper. Panelboard bus current ratings shall be determined by heat-rise tests conducted in accordance with UL 67.
  - 1. Busbars shall be braced for the indicated short circuit level scheduled.
  - 2. Busbars shall be installed completely throughout the panel for installation of both required and future breakers. Schedules indicate spaces for future breakers.
  - 3. Busbars shall be designed so circuit breakers may be changed without machining, drilling or tapping.
  - 4. Separate isolated Neutral and Ground busbars shall be provided. If called for on panel schedules, Neutral busbar may be oversized. Ground busbar shall be identified with green stripe and fully bonded to enclosure.
- E. Circuit Breakers: Circuit breakers shall be the molded case type with trip and interrupting ratings as shown on the Drawings.
- F. Series rating shall not be allowed unless specifically noted on drawings.
- G. Manufacturer:
  - 1. Distribution panels shall be Square D, Siemens or approved equal.

### **PART 3 EXECUTION**

- 3.01 Installation: Panelboards and Distribution Panels shall be installed where indicated on the Drawings, and in accordance with the manufacturer's instructions.
- 3.02 Installation:

- A. Panelboards and Distribution Panels shall be installed with the top of the box 6'-6" above the floor. Panelboards and Distribution Panels shall be plumb within 1/8-inch. The highest breaker-operating handle shall not be higher than 72 inches above the floor.
- B. Floor mounted Panelboards and Distribution Panels shall be installed on a concrete house keeping slab. The concrete slab shall be a minimum of 4" above finished floor, with minimum of 6" extension beyond equipment. The concrete slab shall have a 1/2" chamfer. See Division 3 for concrete work requirements.

3.03 Field Tests:

- A. Insulation Resistance Tests: Perform insulation resistance tests on circuits with #2 AWG and larger conductors to be energized with a line-to-neutral voltage of 120 volts or more. Make these tests after all equipment has been connected, except that equipment, which may be damaged by the test voltage, shall not be connected. Test the insulation with a 500Vdc insulation resistance tester with a scale reading 100 megohms. The insulation resistance shall be 2 megohms or more. Submit results for review.
- B. Grounding: Grounding shall conform to Section 26 05 26.
- C. Continuity: Panelboard and Distribution Panel circuits shall be tested for continuity prior to energizing. Continuity tests shall be conducted using a dc device with a bell or buzzer.

END OF SECTION



## SECTION 26 27 26

### DEVICES WIRING

#### **PART 1 GENERAL**

##### 1.01 Description of Work

- A. The work of this section consists of:
  - 1. Furnishing, installing, and connecting all duplex receptacles complete with wall plates and/or covers, as shown on the Drawings.
  - 2. Furnishing, installing and connecting all single pole and three-way switches complete with wall plates and or handle operators, as shown on the Drawings.

##### 1.02 Related Work

- A. See the following specification sections for work related to the work of this section:
  - 1. Section 26 05 33 - Conduits, Raceways and Fittings.
  - 2. Section 26 05 19 - Low Voltage Wire and Cable.
  - 3. Section 26 05 34 - Junction and Pull Boxes.

##### 1.03 Submittals: As specified in Division 1.

- A. Submit manufacturers published descriptive literature properly marked to identify the items to be supplied.
- B. A single complete submittal is required for all products covered by this Section.

#### **PART 2 PRODUCTS**

##### 2.01 Receptacles

- A. General - Receptacles shall be heavy duty, high abuse, grounding type.
- B. Duplex Receptacles
  - 1. Receptacles shall be specification grade, rated 20 ampere, two-pole, 3-wire, 120 volt, NEMA 5-20 configuration, self-grounding with screw terminals. Color shall be ivory or as selected by the Architect.
  - 2. Devices shall have a nylon composition face, back and side wired.
  - 3. Manufacturer: Leviton #5362 Series, Hubbell #5362-I Series.
- C. GFCI Receptacles
  - 1. Device shall be Smart Lock with lockout action, rated 20 ampere, 2-pole, 3-wire, 120 volt, conforming to NEMA 5-20 configuration. Face shall be nylon composition. Unit shall have an LED type green indicator light, test and reset push buttons. Color shall be ivory unless otherwise noted.
  - 2. GFCI component shall meet UL 2003 Class A standards with a tripping time of 1/40 second at 5 milliamperes current unbalance. Operating range shall extend from -31°F to 158°F. Unit shall have transient voltage protection and shall have a diagnostic indication for miswiring.
  - 3. Manufacturer: Leviton #8898-I Series.
- D. GFCI Blank Face Devices

1. Device shall be Smart Lock with lockout action, rated 20 ampere, 2-pole, 3-wire, 120 volt, blank face, dead front. Face shall be nylon composition. Unit shall have a test and reset push buttons. Color shall be ivory unless otherwise noted.
  2. GFCI component shall meet UL 2003 Class A standards with a tripping time of 1/40 second at 5 milliamperes current unbalance. Operating range shall extend from -31°F to 158°F. Unit shall have transient voltage protection and shall have a diagnostic indication for miswiring.
  3. Manufacturer: Leviton #8590-I Series.
- E. Surge Suppression Receptacles
1. Device shall be rated 20 ampere, 2-pole, 3-wire, 120 volt. Face shall be nylon composition. Unit shall have an LED type "Power-on" indication light and damage-alert audible alarm. Color shall be ivory unless otherwise noted.
  2. Surge suppression protection shall be listed to UL standard 1449 and shall instantly absorb a transient surge of 6,000 volts minimum. A minimum of four (4) Metal Oxide Varistors shall be utilized to absorb transients.
  3. Manufacturer: Leviton #8380-I Series, Hubbell #HBL8362S Series.

## 2.02 Switches

- A. Switches shall be rated 20 amperes to 120/277 volts ac. Units shall be flush mounted, self-grounding, quiet operating toggle devices. Handle color shall be ivory or as selected by the Architect.
  1. Manufacturer: Leviton #1221-2I Series, Hubbell #HBL1221 Series.
- B. Timed switches: Shall be as designed by Paragon Electric Company # ET2000f, Watt Stopper TS-100 or Leviton # 6215M rated for the voltage specified on drawings. Time out shall be adjustable from 5 minutes up to 12 hours. Unit shall be provided with warning alarm.
- C. Motion Sensor shall be dual technology as designed by Watt Stopper DT series. Use protective wire covers in restrooms, multi-use, cafeteria, etc.

## 2.03 Plates

- A. General - Plates shall be of the style and color to match the wiring devices, and of the required number of gangs. Plates shall conform to NEMA WD 1, UL 514 and FS W-P-455A. Plates on finished walls shall be non-metallic or stainless steel. Plates on unfinished walls and on fittings shall be of zinc plated steel or case metal and shall have rounded corners and beveled edges.
- B. Non-Metallic: Plates shall be plain with beveled edges and shall be nylon or reinforced fiberglass.
- C. Stainless Steel: Plates shall be .040 inches thick with beveled edges and shall be manufactured from No. 430 alloy having a brushed or satin finish.
- D. Cast Metal: Plates shall be cast or malleable iron covers with gaskets so as to be moisture resistant or weatherproof.
- E. Blank Plates: Cover plates for future telephone outlets shall match adjacent device wall plates in appearance and construction.

## PART 3 EXECUTION

### 3.01 Installation of Wiring Devices

- A. Interior Locations: In finished walls, install each device in a flush mounted box with washers as required to bring the device mounting strap level with the surface of the finished wall. On unfinished walls, surface mount boxes level and plumb.
- B. Mounting Heights: Measure locations of wall outlets from the finished floor to the center of the outlet box. Adjust boxes so that the front edge of the box shall not be farther back from the finished wall plane than 1/4-inch. Adjust boxes so that they do not project beyond the finished wall. Height above finished floor to center of device unless otherwise noted on Drawings shall be as follows:
  - 1. Receptacles 18 Inches above finished floor
  - 2. Toggle Switches 48 Inches above finished floor
- C. Receptacles
  - 1. Ground each receptacle using a grounding conductor, not a yoke or screw contact.
  - 2. Install receptacles with connections spliced to the branch circuit wiring in such a way that removal of the receptacle will not disrupt neutral continuity and branch circuit power will not be lost to other receptacles in the same circuit.

3.02 Installation of Wall Plates

- A. General - Plates shall match the style of the device and shall be plumb within 1/16-inch of the vertical or horizontal.
- B. Interior Locations, Finished Walls: Install non-metallic plates so that all four edges are in continuous contact with the finished wall surfaces. Plaster filling will not be permitted. Do not use oversized plates or sectional plates.
- C. Interior Locations, Unfinished Walls: Install stainless steel or cast metal cover plates.
- D. Exterior Locations: Install cast metal plates with gaskets on wiring devices in such a manner as to provide a rain tight weatherproof installation. Cover type shall match box type.
- E. Future Locations: Install blanking cover plates on all unused outlets.
- F. All receptacles shall be labeled with panel and circuit number. Contractor shall provide 3/8" clear label tape on each wall plate with 1/4" black machine lettering.

3.03 Tests

- A. Receptacles
  - 1. After installation of receptacles, energize circuits and test each receptacle to detect lack of ground continuity, reversed polarity, and open neutral condition.

END OF SECTION

SECTION 26 28 16

**CIRCUIT BREAKERS**

**PART 1 GENERAL**

1.01 Description of Work

- A. The work of this Section consists of providing circuit breakers as shown on the Drawings and as described herein.

1.02 Related Work: See the following Specification Sections for work related to the work in this Section.

- A. 26 05 10 General Electrical Requirements
- B. 26 24 16 Panelboards and Distribution Panels

1.03 Submittals

- A. Shop Drawings - Submittals shall be in accordance with Division 1. For each circuit breaker furnished under this Contract, submit manufacturer's name, catalog data, and the following information:
  - 1. Terminal connection sizes.
  - 2. Voltage rating.
  - 3. Breaker manufacturer, types, trip ratings and interrupting ratings.
- B. Single Submittal - A single complete submittal is required for all products covered by this Section.
- C. Closeout Submittals: Submit in accordance with Division 1 and Section 26 05 10, operation and maintenance data for circuit breakers including nameplate data, parts lists, manufacturer's circuit breaker timer, current, coordination curves, factory and field test reports and recommended maintenance procedures.

1.04 Warranty

- A. Manufacturer shall warrant specified equipment free from defects in materials and workmanship for the lesser of one (1) year from the date of installation of eighteen (18) months from the date of purchase.

**PART 2 PRODUCTS**

2.01 Circuit Breaker: Each circuit breaker shall consist of the following:

- A. A molded case breaker with an over center toggle-type mechanism, providing quick-make, quick-break action. Each circuit breaker shall have a permanent trip unit containing individual thermal and magnetic trip elements in each pole. Circuit breakers shall have variable magnetic trip elements which are set by a single adjustment to assure uniform tripping characteristics in each pole.
- B. Breaker shall be calibrated for operation in an ambient temperature of 40°C.

- C. Each circuit breaker shall have trip indication by handle position and shall be trip-free.
- D. Three pole breakers shall be common trip.
- E. The circuit breakers shall be constructed to accommodate the supply connection at either end of the circuit breaker. Circuit breaker shall be suitable for mounting and operation in any position.
- F. Circuit breakers used for emergency system shall be lockable for lockout to prevent tampering.
- G. Breakers shall be rated as shown on Drawings.
- H. Series rating of circuit breakers shall not be allowed unless specifically noted on drawings.
- I. Breakers shall be UL listed. Circuit breakers shall have removable lugs.
- J. Lugs shall be UL listed for copper and aluminum conductors.
- K. Breakers shall be UL listed for installation of mechanical screw type lugs.
- L. Circuit breakers serving HACR rated loads shall be HACR type. Circuit breakers serving other motor loads shall be motor rated.
- M. Breakers indicated as "current limiting " (CL), shall be of the non-fused type; Square D I-Limiter, Cutler Hammer Limit-R, or ITE Sentron only. Lock out circuit breakers shall be used for all emergency systems and fire alarm circuit breakers

**PART 3 EXECUTION**

3.01 Mounting

- A. The highest breaker operating handle shall not be higher than 72 inches above the floor.

END OF SECTION

SECTION 27 10 00

**LOW VOLTAGE STRUCTED CABLING**

**PART 1 GENERAL**

1.01 DESCRIPTION OF WORK

- A. The work to be performed under this Section consists of providing all wire and cable used for the data network, telephone system, and CATV broadband distribution system including terminations as shown on the Drawings and as described herein. Systems included are fiber optic backbone system; Category 6 data station distribution, telephone feeder cables, telephone station cables, and CATV coax cables. The intention of the data cabling is to provide a category 6 network that is capable of running at gigabit Ethernet speeds. The cabling, the terminations and the jacks used must meet these standards.
- B. Furnishing, installing, and connecting all data, telephone, and CATV outlets, complete with wall plates and/or covers, as shown on the Drawings or within this section.
- C. Furnishing, installing, and connecting all data and CATV equipment as specified within this section. Equipment includes but may not be limited to floor racks, wall equipment cabinets, wire management and fiber and category 6 patch panels
- D. Final documentation submittal shall be provided in both hard and electronic copy.

1.02 RELATED WORK

- A. See the following specification sections for work related to the work of this section:
  - 1. 26 05 10 General Electrical Requirements.
  - 2. 26 05 33 Conduits, Raceways and Fittings.

1.03 STANDARDS AND CODES

- A. Work and materials shall be in compliance with and according to the requirements of the latest revision of the following Standards and Codes:
  - 1. National Electrical Manufacturers Association (NEMA):
  - 2. WC 5-1973 (R1985), Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
  - 3. WC7-1988, Cross-Linked-Thermosetting-Polyethylene, Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
  - 4. National Fire Protection Association (NFPA), National Electrical Code (NEC) - Latest Revision.
  - 5. California Electrical Code (CEC).
  - 6. Underwriters Laboratories (UL):
    - a. 44-83 (R1988), Rubber-Insulated Wires and Cable.
    - b. 83-1983 (R1989), Thermoplastic-Insulated Wires and Cables.
    - c. 510-1986, Insulating Tape.
    - d. EIA/TIA-568, EIA/TIA TSB-36 and TSB-40

#### 1.04 SUBMITTALS

A. In accordance with Section 26 05 10.

1. Within thirty-five (35) calendar days after the date of award of the contract, the contractor shall submit to the Architect for review, eight (8) copies of a complete submission. The submission shall consist of four (4) major sections, with each section separated with insertable index tabs. The first section shall be the "index", which shall include the project title and address, name of the firm submitting the proposal and the name of the Architect. Each page in the submission shall be numbered chronologically and shall be summarized in the index. The second section shall include a copy of the authorized distributor's valid C-10 California State Contractors License, letters of factory authorization and guaranteed service, list of projects of equal scope and list of proposed instrumentation to be used by the contractor. The third section shall contain the comparative specification listing, including a complete listing of the characteristics of the equipment to be furnished. The fourth section shall contain an original factory data sheet for every piece of equipment in the specifications.
2. The manufacturer's representative shall provide a letter with submittals from the manufacturer of all major equipment stating that the manufacturer's representative is an authorized distributor.
3. In order to establish quality and standards of performance of equipment required by the Owner, the specified Data Systems is that of Panduit/Belden Integrity System. All mechanical, electrical and general information set forth on the respective data sheets for each specified item shall be considered as part of these Specifications and binding herein. Any proposed equal item offered shall be substantiated fully to prove equality. The Architect reserves the right to require a complete sample tested by an independent testing laboratory to prove equality. The decision of the Architect regarding equality of proposed equal items will be final.
4. Where specific make and models of equipment have been specified, the words "or equal" are understood to appear after the item specified. All parties understand that any substitution(s) of specified products are done for the purpose of cost savings to the Owner. Therefore, any material substitutions or deviations proposed by the Contractor shall be included with the initial bid and shall show a line item credit to the Owner for each item substituted in lieu of specified products.
5. Shop Drawings: Provide Shop drawings for the layout of the MDF room. The shop drawings should include the location of all racks and equipment and shall include elevations of the walls and racks. The shop drawings shall be provided to the architect, engineer and owner for review and approval prior to the installation of the equipment in the MDF room. Shop drawings shall be approved by the Architect, Engineer and the District Technology Representative. Coordinate the shop drawings with the district Security representative, Fire Alarm Contractor and PA/Intercom Contractor.
6. Upon completion "As-built" documentation showing actual devices locations and devices identification as installed and labeled, including Patch Panels and Data outlets.

#### 1.05 QUALIFICATIONS

- A. The Contractor shall be from an established and locally run business, which has been operating and installing the specified products for a minimum of five years.

- B. The Contractor shall be factory certified for installation of the product specified. Proof of certification shall be included in the submittal.
- C. The contractor for this work shall have completed at least three- (3) similar size and complexity project experience. The contractor shall provide at least 50% of their technicians, having been trained by the manufacture, to perform all copper and fiber cable terminations.
- D. The contractor shall be able to extend the manufacturer's warranties for this project directly to the end-user.

#### 1.06 QUALITY ASSURANCE

- A. The data system shall carry the manufacturer's performance warranty for each cable link as defined by TIA/EIA-568A for a period of 15 years from the date of registration by the manufacture and extended directly to the school district. All active components shall extend their normal manufacture's warranty.
- B. Field tests shall be performed as specified within this specification.
- C. No splices will be permitted in feeder or drop cables. If splices are required the Contractor must designate desired location on system maps and obtain owners approval prior to any cable pulling on that run.
- D. Where specific make and models of equipment have been specified, the words "or equal" are understood to appear after the item specified. If a bidder proposes to offer a substitution item, it is bidders responsibility, to prove that such an item is an equal and will meet the intent and requirements to the specifications. A detailed explanation as well as literature or other documentation shall be provided. In all cases the final decision as to acceptability of an alternate item will be made by the Owner. Unless otherwise noted, it is assumed that all equipment offered is exactly as specified.

#### 1.07 PRODUCT GUARANTEE:

- A. All structured cabling system must be installed per the following:
  1. Meet all TIA/EIA commercial building wiring standards
  2. Panduit categorized product must be used in conjunction with an Equivalent or higher Category UL or ETL verified cable.
  3. Panduit Products must be installed per Panduit instruction sheets.
  4. Belden products must be installed per Belden guidelines and in accordance with TIA/EIA standards

Note: All Networks shall be installed per applicable standards and manufacturer's guidelines.

## **PART 2 PRODUCTS**

### 2.01 COPPER CONDUCTORS

- A. Category 6 – Data station cables shall be Category 6, 4 Pair UTP 24 AWG solid bare copper in a PVC jacket. The 4-pair non-plenum Cable is a high-speed, high performance, 100-ohm cable. It is capable of carrying high bit-rate signaling for extended distances in building distribution systems. The cable shall exceed the EIA/TIA-568A Commercial Building Wiring Standard for Category 6 cables. All cable used on this project shall be of the same type and conductor material. All cables are to be terminated to the appropriate RJ45 station jack or patch panel. All cables shall be numbered and labeled. Category 6 cables shall be as manufactured by Leviton, Belden, Berk-Tek, Commscope or Lucent.



- B. Cable shall be routed in conduit or above T-bar ceiling through "J" hooks from outlet to patch panel.
- C. Category 6 Telephone backbones shall be one or more 25 or 50 pair cables. Backbone cables shall be 24 AWG 25 or 50 pair Category 6 rated. Cable routed underground inside conduit shall be rated for underground use. Category 6 cables shall be Superior Essex or equal as manufactured. Each feeder cable servicing an IDF shall have a 50 percent spare.

## 2.02 FIBER CONDUCTORS:

- A. Fiber Optic – Singlemode Fiber Optic cables (OM3) shall be 12 strands fiber loose tube style. Crush resistance rating shall be defined by EIA-455-41. Impact resistance shall be defined by EIA-455-25. Cable shall be UL listed for NEC compliance. Cable shall be glass type 50/125  $\mu\text{m}$  with maximum attenuation of 3.5dB/km @ 850nm, 1.5 dB/km @1300nm. Terminate Singlemode fiber optical cables using approved duplex "LC" connectors. Twelve-strand fiber cable shall be Superior Essex, TeraGainor equal. Fiber Optic cables routed underground inside conduit shall have the DryBlock water blocking tape. One 12 strand, Singlemode fiber optic cables with proper termination, service loops and installation in fiber management units at both ends is required between each IDF and the MDF.
- B. Cables shall be installed in conduit between each IDF and the MDF fiber patch panels. Minimum bend shall not be less than 7.5 inches or fifteen times the cable diameter.
- C. A service loop of at least 20 feet is to be coiled into every Christie box and labeled for all cables passing through a pull can. A service loop of 30 feet shall be provided at each termination end of the cable run. The service loop shall be left in a neat workmanship manner, secured appropriately with all bend radius specifications observed.
- D. All Singlemode fibers are to be field terminated to Duplex LC style connectors and connected to the Fiber patch panel.

## 2.03 DATA/TELEPHONE OUTLETS

- A. Data and telephone outlets shall be modular RJ45 Jack and shall be U.L. listed meet FCC Part 68 requirements and fully comply with NEC Article 800. Data outlets shall comply with TIA-568B electrical, mechanical and transmission requirements. All outlets shall comply with Category 6 rating. Outlet color shall be black and shall be keyed style. Manufacturer: Panduit Giga-Channel Mini Jack Series CJ688BL. See drawings for cover plate type.

## 2.04 CATV OUTLETS

- A. Device shall be a modular "F" connector jack and shall be U.L. listed. Faceplate shall be Panduit CFP4IW with "F" connector Jack, Panduit # CMFBA series.
- B. Coax cable from each CATV outlet shall be homerun to nearest IDF.

## 2.05 PLATES

- A. General - Plates shall be of the style and color to match the wiring devices, and of the required number of gangs. Plates shall conform with NEMA WD 1, UL 514 and FS W-P-455A. Telephone wall plates on finished walls shall be stainless steel. Television wall plates shall be Panduit and accommodate Panduit Mini-Com connectors.

## 2.06 RACK EQUIPMENT

- A. Provide new floor mounted racks where noted for IDF/MDF. Coordinate installation of new with school district technology personnel. Racks are to be ASW or Chatsworth 55053-203 with appropriate ladder racks for cable management and physical security.

- B. Vertical wire management will be provided by two Panduit WMPVS50 & two (2) wire management systems.
- C. Provide new wall mounted cabinet racks where noted for IDF/MDF. Rack shall have a solid front door and shall be capable of swinging/opening to access the back of Patch panels. Rack shall be Chatsworth 11996-736 or equal. Provide fire treated backboard behind each cabinet. IDF racks shall have space for minimum of 16 rack spaces for district use.
- D. Each patch panel shall have an accompanying horizontal wire management unit supplied. Panduit part number WMPF1.
- E. Each MDF/IDF equipment shall be grounded to Building Steel or Cold Water Pipe by a #4 or larger copper conductor. Products for grounding equipment shall be Panduit TRGB19, TRG191, TRGK672, TRGKJ4120.
- F. Each MDF/IDF shall be provided with Power Strip and Surge Protector. Power Strip with surge protector shall have a minimum of 6 outlets and shall be 19" rack mounted. Acceptable manufacturer are APC, APW and Leviton.

#### 2.07 PATCH PANELS

- A. Giga-channel modular patch panel shall be 48 port, Panduit Model No. CPPKG48WBL. Patch panels shall mount to standard EIA 19" racks. At each IDF and the MDF provide proper quantity of Giga-channel patch panels with appropriate giga-channel mini-jacks to terminate all incoming data and telephone station cables and 10% open connectors.
- B. A horizontal wire manager as specified above shall follow each patch panel.

#### 2.08 PATCH CABLES

- A. The contractor shall provide green category 6 data patch cables. Quantity of data patch cables shall equal to the total number of station cables of the site. One half of the cables shall be 3 feet in length and one half will be 6 feet in length.
- B. The contractor shall provide yellow category 6 telephone patch cables that are terminated as 110 connectors, 1 pair, (white blue/blue) on one end and terminated as RJ45, 568B on the other end. Quantity of the telephone patch cables shall be one fourth of the total number of station cables for the site.
- C. The contractor shall provide a single 1m, ST-ST, duplex multi-mode fiber optic patch cable for each IDF.

#### 2.07 TELEPHONE 110 BLOCKS

- A. Telephone 110 blocks will be provided to terminate all telephone feeder cables. All 110 blocks, cable terminations and cross connects will be labeled to district specifications. Telephone 110 blocks shall be 19" rack mount type. Contractor shall provide a patch cord between 110 blocks and the patch panels the telephone stations is terminated to. Coordinate termination of feeder cables with school district. Telephone 110 blocks shall be installed on 19" rack.

### **PART 3 EXECUTION**

#### 3.01 CABLE INSTALLATION

- A. Clean Raceways - Clean all raceways prior to installation of cables as specified in Section 16110 - Conduits Raceway and Fittings.

- B. All "J" hooks are to be placed with a maximum distance of 4 feet between hooks. Cable will be attached to hooks in such a way such as not to affect any electrical property of the cable.
- C. Cable Pulling - Exercise care in pulling wires and cables into conduit or raceways so as to avoid kinking, putting undue stress on the cables or otherwise abrading them. No grease will be permitted in pulling cables. Only soapstone, talc, or UL listed pulling compound will be permitted. The raceway construction shall be complete and protected from the weather before cable is pulled into it. Swab conduits before installing cables and exercise care in pulling, to avoid damage to conductors.
- D. Bending Radius - Cable bending radius shall be per applicable code and manufacturer recommendations. Install feeder cables in one continuous length.
- E. All low voltage system conduit stub out and nipples shall have end bushing.
- F. Examine areas and conditions under which LAN system is to be installed. Notify contractor in writing of conditions detrimental to proper completion of the work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to installed.
- G. All backbone cable will be run through clean conduit with appropriately placed junction boxes.
- H. All fiber backbones will be connected to patch points. All CATV drop and backbone cables will be connected to specified equipment including splitters to make a complete functioning system. All telephone cross connects from backbone 110 blocks to station cable 110 blocks will be done to district telephone systems supplier requirement. All voice cross connects from the feeder cables in the MDF to the PBX cross-connect field will be done by District personnel or their representative.
- I. All data and telephone station cabling can be run in J-Hooks above accessible ceiling or in conduit in non-accessible space then through raceway running to their respective station outlet unless otherwise specified.
- J. All cabling can be run in J-Hooks above accessible ceiling or in conduit in non-accessible space

### 3.02 INSTALLATION OF WIRING DEVICES

- A. Mounting Heights: Measure locations of wall outlets from the finished floor to the center of the outlet box. Adjust boxes so that the front edge of the box shall not be farther back from the finished wall plane than 1/4-inch. Adjust boxes so that they do not project beyond the finished wall.
- B. The MDF floor racks and wire management will be installed in the exact location specified in writing by the owner at the time of installation. The general location is shown in the drawings.
- C. IDF equipment cabinets are to be mounted on 3/4" fire treated backboard at an exact location to be specified by the district. The general IDF locations are shown in the drawings.
- D. All cables are to be terminated to panels installed as part of this section.
- E. All patch points, CATV splitter outputs, telephone 110 blocks and station outlets are to be labeled to district specifications.

### 3.03 TESTING

- A. Test all station cables for continuity, polarity and pairing on all pairs.
- B. All data and telephone cat-6 cables are to be tested for compliance with the latest 1000Tx network standard and EIA/TIA 568B performance parameters for 100Base Tx Ethernet using a hand held network scanner. Network analyzer is to be a Fluke DSP 4000 / 6000 or Penta scanner. The tester used must meet the standards of the manufacture for the cabling and

termination connectors used. . Hardcopy and softcopy results are to be provided for all jacks tested. Softcopy results to be provided on a Windows XP compatible disk.

- C. All multi-mode fiber optic strands are to be tested bi-directionally at both 850nm and 1300nm. Tests are to be performed using a power meter and light source or an OTDR to measure attenuation from coupler-to-coupler at the distribution panels. No strand is to exhibit more than 3.75 dB/km at 850nm, 1.5 dB/km at 1300nm. Fiber optic cables shall be tested prior to installation or the manufacture certification.
- D. Any cables that fail to meet the stated test requirements are to be repaired/replaced by the contractor prior to acceptance by the Moreland School District.

END OF SECTION

SECTION 28 31 00

**FIRE ALARM SYSTEM**

**PART 1 GENERAL**

1.01 SCOPE

- A. This section of the specification includes the furnishing, installation, connection and testing of the microprocessor controlled, intelligent reporting fire alarm equipment required to form a complete, operative, coordinated system. It shall include, but not be limited to, alarm initiating devices, alarm notification appliances, Fire Alarm Control Panel (FACP), auxiliary control devices, annunciators, and wiring as shown on the drawings and specified herein.
- B. The fire alarm system shall comply with requirements of NFPA Standard 72 for Protected Premises Signaling Systems except as modified and supplemented by this specification. The system shall be electrically supervised and monitor the integrity of all conductors.
- C. The fire alarm system shall be manufactured by an ISO 9001 certified company and meet the requirements of BS EN9001: ANSI/ASQC Q9001-1994.
- D. The system and its components shall be Underwriters Laboratories, Inc. listed under the appropriate UL testing standard as listed herein for fire alarm applications and the installation shall be in compliance with the UL listing.
- E. The installing company shall employ NICET (minimum Level II Fire Alarm Technology) technicians on site to guide the final checkout and to ensure the systems integrity.
- F. College of Marin has an existing Simplex 4100U FACP installed at the site. The scope for this project is to add new module to upgrade the existing Simplex 4100U to a Voice EVAC panel. Provide and connect new devices at the modular buildings to the existing Simplex 4100U FACP as shown in the contract documents. Coordinate with Simplex Manufacturer for exact installation and connection requirement. Provide all modules as required. The contractor shall include in their bid to test all (E) fire alarm devices to ensure all the devices are working properly before construction and at the conclusion of the project. The test should be with the project IOR/District PM and it need to be sign off by the IOR/District PM. In the event any (E) devices are not working or functioning properly prior to construction, the contractor shall document the devices and inform the district/architect. In the event any (E) devices are not working or functioning properly at the conclusion of the project, the contractor shall replace with new as required to ensure the fire alarm system is functioning properly. The contractor shall verify that the conditions in the field match the conditions shown on the drawings and make any modifications as required. The contractor shall provide a fully operational fire alarm system at the conclusion of the project.

1.02 CONDITIONS AND REQUIREMENTS

- A. Refer to the General Conditions, Supplementary General Conditions and Division 1 – General Requirements.
- B. The Contractor shall furnish all labor, services and materials necessary to furnish and install a complete, functional fire alarm system (System). The System shall comply in respects with all pertinent codes, rules, regulations and laws of the Authority, and local jurisdiction. The System shall comply in all respects with the requirements of the specifications, manufacturer's recommendations and Underwriters Laboratories Inc. (ULI) listings.

- C. It is further intended that upon completion of this work, the Owner be provided with:
1. Complete information and drawings describing and depicting the entire system(s) as installed, including all information necessary for maintaining, troubleshooting, and/or expanding the system(s) at a future date. Minimum (2) O + M shall be provided.
  2. Complete documentation of system(s) testing.
  3. Certification that the entire system(s) has/have been inspected and tested, is/are installed entirely in accordance with the applicable codes, standards, manufacturer's recommendations and ULI listings, and is/are in proper working order. Contractor shall use "Fire Alarm System Certification and Description" as required by Section 1-6.2 of NFPA 72 - 2016 edition.

1.03 INCORPORATED DOCUMENTS:

- A. Section 01330 Submittal Procedure, Section 0170 Execution Requirements, applies to all work in this section.
- B. Related work included in other sections:
1. 26 05 10 General Electrical Requirements.
  2. 26 05 33 Conduits, Raceways and Fittings.
  3. 26 05 19 Low Voltage Wire and Cable.

1.04 DESCRIPTION

- A. This specification intends to describe a fire alarm system, which is intelligent analog detecting, low voltage and modular with multiplex communication techniques in full compliance with all applicable codes and standards. The features described in this specification are a requirement for this project and shall be furnished by the successful contractor.
1. The system shall include all required hardware, conduits, raceways, interconnecting wiring and software to accomplish the requirements of this specification and the contract drawings, whether itemized or not.
  2. All equipment furnished shall be new and the latest state of the art products of a single manufacturer, engaged in the manufacturing and sale of analog fire detection devices for over ten years. The manufacturer shall have an installed base of analog systems as a reference.
  3. The new equipment specified is to be compatible with existing Simplex 4020 or upgraded Simplex 4100ES fire alarm control panel, which was selected to meet the special requirements for design of this project. Only Simplex is acceptable.
  4. Modification includes, but not limited to, any components replacement, additional or deletion in the control and remote annunciation panel; addition or deletion of external alarm initiating devices, evacuation signal devices; external and internal wiring of the existing control panel; testing of all new devices and equipment, programming of the system; power booster panel and analog interfacing modules.

1.05 MATERIALS AND SERVICES

- A. The system shall include the below listed component and material, but not be limited to the following elements:
  - 1. Power supplies, batteries and battery chargers.
  - 2. Equipment enclosures.
  - 3. Intelligent addressable heat detectors, smoke detectors, strobes, horn-strobe combination, and horns.
  - 4. Software and devices as required to provide a complete functioning system.
  - 5. Wiring, raceway, and all necessary cutting and patching.
  - 6. Installation, testing, certification, and operator's training.
  - 7. Field verifying field existing conditions before doing any work.
  - 8. Labeling each device with its specific device address with transparent labels and red markings.
  - 9. Test the complete work. Correct any deficiencies to the satisfaction of the College of Marin or its designated representative.

#### 1.06 APPLICABLE STANDARDS

- A. Devices and equipment for fire alarm system shall be listed by U.L. and State Fire Marshal for the specific purpose the device or equipment is used.
- B. Work and material shall be in compliance with and according to the requirements of the latest revision of the following standards and codes.
  - 1. 2016 California Building Standards Administrative Code, Part 1, Title 24 California Code of Regulations (C.C.R.).
  - 2. 2016 California Building Code (CBC), Part 2, Title 24 C.C.R.
  - 3. 2016 California Electric Code (CEC), Part 3, Title 24 C.C.R.
  - 4. 2016 California Mechanical Code (CMC), Part 4, Title 24 C.C.R.
  - 5. 2016 California Plumbing Code (CPC), Part 4, Title 24 C.C.R.
  - 6. 2016 California Fire Code.
  - 7. 2016 California Energy Code
  - 8. Title 19 C.C.R., Public Safety, State Fire Marshal Regulations.
  - 9. NFPA 72, 2016 National Fire Alarm Code with California Amendments.
- C. Local and State Building Codes.
- D. All requirements of the Authority Having Jurisdiction (AHJ).

1.07 QUALIFICATIONS OF THE INSTALLER

- A. Before commencing work, submit data showing that the contractor has successfully installed fire alarm systems of the same type and design as specified, or that they have a firm contractual agreement with a subcontractor having the required manufacturers' training and experience. The contractor shall include the names and locations of at least two installations where the contractor, or the subcontractor above, has installed such systems.

1.08 MANUFACTURER'S REPRESENTATIVE

- A. Provide the services of representative or technician from the manufacturer of the system, experienced in the installation and operation of the type of system provided. The technician shall supervise installation, software documentation, adjustment, preliminary testing, final testing and certification of the system. The technician shall provide the required instruction to the owner's personnel in the system operation, maintenance and programming.

1.09 SUBMITTAL

- A. The contractor shall include the following information in the equipment submittal:
  - 1. Scope of project, as they relate to the fire alarm system.
  - 2. Floor Plans Showing Fire Alarm Devices: An AutoCAD file of the Floor plans shall be provided by the District to the contractor. Floor plans shall indicate room identifications, the location of fire and smoke barrier walls for verification of smoke and fire smoke damper, and fire door detection and control.
  - 3. Design and provide scaled Fire Alarm site plans showing all building devices remote annunciation panel and command center, control panel, off-building remote devices, Building Central Terminal Cabinets, conduit sizes, number of conductor and AWG sizes between them.
  - 4. Provide a single line riser diagram to demonstrate:
    - a. The type of devices installed.
    - b. The number of devices supplied by each circuit.
    - c. The subdivision of zones or floors within the building.
  - 5. Provide point-to-point diagram illustrating the wiring methods and styles used for:
    - a. Initiating circuits.
    - b. Indicating Circuits.
  - 6. Valid and Current CSFM Listing Sheets shall be provided for every new fire alarm component to be installed within the scope of work of the project. Non-CSFM listed devices permitted to be installed shall include diagrammatic electrical drawings demonstrating their electrical isolation as prescribed in Section 208©, Article 3, Chapter 1.5. Title 19, CCR. Listing numbers noted on the device symbol legend does not meet requirement for listing verifications.
  - 7. Power Calculations



- a. Battery capacity calculations.
  - b. Supervisory power requirements for all equipment.
  - c. Alarm power requirements for all equipment.
  - d. Justification showing power requirements of the system power supplies.
  - e. Voltage drop calculation, for wiring and in worst-case condition.
8. Provide complete manufacturer's catalog data including supervisory power usage, alarm power usage, physical dimensions, finish and mounting requirements.
  9. Floor plans showing all initiating, end of line, supervisory, indicating appliances and output control devices; including circuit interface panels, annunciators, printers, video display terminals, and the main CPU locations.
  10. Riser shall show all Fire Alarm Control Panels installed on site and shall also be indicated on the Fire Alarm Site Drawings.
  11. A symbol legend reflecting all new fire alarm system devices shall be included. This legend should be consistent with the bid document legend for device identification.
  12. Elevation details for manual pull stations and visual fire warning devices. These details include the correct mounting heights in accordance to Chapter 60 of the California Building Code.
  13. Design number and detail of through-fire stop systems that are to be utilized for penetrations through fire rated assemblies.
  14. Sequence of Operations for the fire alarm system and its interrelated and connected system.
  15. Remote annunciation panel dimension, terminals, elevation showing component identification and other pertinent information.
  16. Other information as required by the local fire Marshall during application of permit by the Contractor.
  17. A list of all point numbers and point descriptions shall be provided on the shop drawings. Description shall include the point number, device type, building name, and room name and room number.
- B. For use in system test, a complete operation and maintenance manual with two sets of proposed installation drawings shall be submitted.
1. The following information shall be inscribed on the cover:
    - a. "OPERATION AND MAINTENANCE MANUAL"
    - b. Site Name and Building location.
    - c. The name of the contractor, system manufacturer and system subcontractor.

- d. The name and phone number of the fire department required to respond to alarms at the project location.
- 2. The manual shall be legible and easily read with large drawings folded and contained in pockets. Included in the manual shall be circuit drawings, wiring and control diagrams with data to explain detailed operation and control of each item of equipment and a control sequence describing start up instructions. Included shall be installation instructions, maintenance instructions, safety precautions, test procedures, performance data, and software documentation.
- C. Upon completion of the installation, record drawings shall be submitted on each system before final acceptance of the work. The contractor shall furnish to the Engineer a set of record drawings including system diagrams for each system. The record drawings masters shall be on high-density floppy disks in an AutoCAD Ver. 2000 format.

#### 1.10 SYSTEM FUNCTION

- A. The system shall be a complete, electrically supervised multiplex style fire detection system with intelligent analog alarm initiation, to be device addressable and annunciated as described and shown on the drawings.
  - 1. The maximum number of devices on a single signaling circuit shall not exceed sixty with a capacity of sixty reporting system inputs and sixty system control outputs. The maximum usage of loop addresses shall not exceed 85% of loop capacity.
    - a. Devices attached to the signaling circuit shall be individually identifiable at the control panel for alarm and trouble indication. Smoke detectors shall be interrogated for sensitivity settings from the control panel, logged for sensitivity changes indicating the requirement for cleaning, and tested by a single technician using the panel field test routine.
    - b. Sensitivity settings of individual detectors shall be automatically or manually adjustable from the control panel to reduce the incidence of false alarms caused by environmental conditions.
    - c. The analog signaling circuits shall be installed in the fire alarm control panel enclosure or in remote circuit interface panel enclosures.
    - d. Analog signaling circuits shall be selectable Style "Y" or Style "Z" wiring.
  - 2. The system shall support intelligent analog smoke detection, conventional smoke detection, manual station, water flow, supervisory, security, Strobes, horn-strobes, horns and status monitoring devices.
  - 3. The panel shall be UL listed as a test instrument for the measurement of the sensitivity or connected intelligent analog ionization and photoelectric smoke detectors to comply with the testing requirements of NFPA 72 E.
  - 4. The system shall annunciate a trouble condition when any smoke detector approaches 80% of its alarm threshold due to gradual contamination, signaling the need for service and eliminating unwanted alarms.
  - 5. Any intelligent analog smoke detector or conventional smoke detector zone shall include a selectable alarm verification capability. This feature shall provide automatic verification of smoke detector alarms as described by NFPA 72.

6. All external circuits shall be listed as power limited circuits per article 760 of the National Electric Code.
7. The system shall provide a one person field test of either the complete system or a specified area, maintaining full functions of areas not under test.
8. The system shall be programmed in the field via a laptop computer. All programmed information shall be stored in nonvolatile memory after downloading into the Fire Alarm Control Panel.
  - a. During program upload or download the system shall retain the capability for alarm reporting.
  - b. The system shall download to a PC for program editing. System program shall be stored on a floppy disk and all programming shall be multi-level password protected.
9. The system shall consist of a central architecture using a single centrally located control unit. The system also shall be operable in a distributed multiplex architecture using a centrally located control unit with interconnection to remote circuit interface panels containing any combination of plug in intelligent analog signaling circuits, plug in conventional initiating device circuits and plug in relays.
10. The system shall support UL listed pre-action/deluge releasing under NFPA 13 Sprinkler Service.
11. The systems as installed shall be Simplex 4100ES, expandable to its predetermined maximum capacity of 2000 devices.

#### 1.11 SYSTEM ZONING

- A. Each intelligent addressable device or conventional zone of the system shall be displayed at the fire alarm control panel and remote annunciation panel by a unique alphanumeric label identifying its location.

#### 1.12 SYSTEM DESCRIPTION AND OPERATION

- A. Provide additions to existing addressable system that utilizes smoke detectors, heat detectors, water flow indicators, and valve supervisory devices, Horns, horn-strobes, horns and controls as shown on the Drawings, a Simplex addressable 4100ES system. Not all devices described below are included in this project.
  1. Power systems and components form DC power supplies.
  2. Provide CLASS B system wiring.
- B. Trouble and alarm systems shall activate the control panel devices, and remote annunciators.
- C. Provide wall-mounted annunciators for any concealed smoke detectors.
  1. The smoke detectors shall be individually annunciated.
  2. Locate the annunciators in public areas, close to the devices, and in accordance with present life safety codes.

- D. Electrically supervises alarm and initiating circuits for wiring or ground faults.
  - 1. Any fault shall cause an audible and visual trouble indication at the control panel and the remote annunciation panel.
  - 2. The zone or addressable device having trouble shall be identified.
  - 3. Zone or addressable device trouble shall not affect normal operation of other system zones.
- E. Provide 20% expansion space for future system upgrades.
- F. Activation of any alarm-initiating device shall:
  - 1. Cause all audible alarm devices to pulse in March time until silenced at the control panel or at the remote annunciation panel.
  - 2. Cause all alarm lamps to flash.
  - 3. Indicate the zone or addressable device at the control panel and at the remote annunciation panel.
- G. Activation of any smoke detector device shall:
  - 1. Perform all functions of initiating devices as noted in 1.12-F and notify SFFD via City Box.
  - 2. Light the LED lamp on operated smoke detectors.
  - 3. Furnish an alarm system closure for connection to an off-site reporting device for monitoring by and call Fire Department via sidewalk City Box.
- H. Operation of any sprinkler water flow switch shall:
  - 1. Perform all functions of initiated devices as noted in 1.12-F and notify fire department via City Box;
- I. Operation of any sprinkler valve supervisory device such as tamper switchers and OS & Y valves shall:
  - 1. Activate a dedicated supervisory zone at the control panel and annunciation at the remote annunciation panel.
  - 2. Not cause evacuation alarm devices to sound.
  - 3. Water flow alarm circuit trouble use for valve supervision is not permitted.
- J. Provide audible and visual trouble indication at the control panel and the remote annunciation panel for the following conditions:
  - 1. Removal of a detection device from the detection circuit;
  - 2. An open or ground fault in a detector circuit or device;
  - 3. An open, short or ground fault in an audible signal circuits;

4. Removal of a system input, output or control module;
  5. Improper condition of a battery or charger.
- K. Failure of AC power shall:
1. Cause the trouble signal to sound at the control panel and annunciation at the remote annunciation panel;
  2. Cause the automatic transfer to stand-by battery power.
  3. All system functions shall be operational, on battery power, for a minimum of 24 hours during a power failure.
- L. System zone assignments shall be per drawings.
- M. Fire Drill: Provide fire drill switch at the fire alarm control panel. When activated, the fire drill switch shall turn on all horns and strobes and other alarm notification devices, but it shall not call fire department.

## **PART 2 PRODUCTS**

### **2.01 FIRE ALARM SYSTEM CONFIGURATION:**

- A. The COLLEGE OF MARIN standard for the fire alarm equipment is as follows:
1. The new fire alarm control system(s) shall be a SimplexGrinnell LP 4100ES with compatible addressable initiating devices and addressable notification appliance circuit devices.
  2. Capacity for expansion
    - a. All new fire alarm systems shall have capacity for future expansion. The control panels, and component modules shall have sufficient capability and enclosure space to handle the following:
      - 1) Each addressable loop shall have 10 percent spare capacity in the number of addresses assigned.
      - 2) Each notification appliance device circuits shall have 10% spare capacity.

### **2.02 MANUFACTURERS**

- A. Acceptable Manufacturers for this project shall be SimplexGrinnell LP. This is a proprietary item to match existing COLLEGE OF MARIN fire alarm standard equipment requirements. No equal shall be accepted.
- B. Products shall be of the latest design; obsolete or discontinued products will not be acceptable. All equipment supplied shall be UL and California State Fire Marshal (CSFM) listed for the required functions.

### **2.03 FIRE ALARM CONTROL EQUIPMENT**

- A. The main fire alarm control panel is new and located in the first floor admin office. The main fire alarm control panel shall contain all the fireman controls necessary for full control of alarm annunciation, acknowledge, audible silence and reset.
- B. Manufacturer Type:
  - 1. The control panel shall be manufactured by SimplexGrinell LP, Model 4100ES, and shall provide power, annunciation, supervision and control for the detection and alarm systems. This is a proprietary item. No equal will be accepted. The panel shall be modular in construction and contain all modules necessary to operate according to this specification and the drawings. The panel shall be provided with IDNet addressable modules and shall be provided with 10 percent spare capacity for each addressable circuit, initiating circuit, and addressable notification circuits for future expansion. The enclosure shall be sized to accommodate the 10 percent space capacity for additional modules.
- C. The control equipment shall be new (i.e., FACP and/or remote power supplies) and shall operate from a three-wire 120VAC supply fed from a single dedicated circuit breaker. The circuit breaker shall be clearly labeled Fire Alarm System and shall be fitted with a clip to prevent it from being turned off. No other (non-fire alarm) equipment shall be fed by this circuit breaker. All power connections whether AC or DC shall be separately fused within the control panel. Where there is an emergency 120VAC system available, the fire alarm and fire alarm auxiliary equipment shall be on the emergency panels.
- D. Battery backup for 24 hours of standby and 5 minutes of alarm shall be provided to power the fire alarm systems in the event of AC power failure. An automatic battery charger, integral to the fire alarm control panels shall be provided. If the battery is larger than 50AH, a separate battery cabinet shall be provided.
- E. A single "silence" switch, located in the main fire alarm control panel, shall silence all audible notification appliances without resetting the fire alarm system. The fire strobes shall continue to operate until the system has been reset.
- F. The fire alarm control panel shall have software controlled by-pass switches, which are password protected. These switches shall be on the auxiliary function keypad and/or on toggle-on/toggle-off function switches.
  - 1. These supervised bypass switches shall be programmed to survive reset/cold and warm start and to toggle on off.
  - 2. The by-pass switches shall be assigned (if applicable) to perform the following functions, one switch per function on level 3 except Fire Drill which shall be on level 1:
    - a. By-pass off-site monitoring "City By-pass"
    - b. By-pass all audible/visual notification appliances for "Signal By-pass"
    - c. One by-pass switch to by-pass all fire door controls (magnetic door holders, roll down fire doors, and accordion doors, if applicable). "Door Holder By-pass"
    - d. By-pass elevator control points for "ELEVATOR By-pass"
    - e. Turn on audible/visual notification appliances and release magnetic door holders for "FIRE DRILL"
- G. The fire alarm circuits shall be provided with isolation modules upon leaving and entering a building(s). Notification branch circuits shall be provided with isolation modules. This module shall allow circuits that are faulty to be isolated from the rest of the fire alarm system.

## 2.04 FIRE ALARM DEVICE LABELING

- A. All the new initiating devices shall be provided with devices labels, which will indicate the device's address number (i.e. ID 2-129) and should be consistent with the addresses provided on the shop drawings. These labels shall be machine manufactured, red in color, and 1/2 inch in height. Labels on smoke or heat detectors shall be affixed to the side of the base.
- B. The fire alarm control panels shall be provided with text label to indicate the location of the initiating device in the field. The text label shall indicate the building name, the floor, the room number, the type of device, and the address associated with the devices. (Example: Gym, Floor 2, and Classroom G212, smoke detector ID1-99)
- C. The text label for all areas, stairways and the classroom numbers shall be coordinates with the Architectural room numbers for the project. All rooms and areas shall be identified by a permanent room number above the doorframe that shall designate the room number for the life of the building regardless of how it is identified by school staff during the years. All rooms without corridor/hall doors (accessed through other rooms) shall have the ID number of the corridor room and a letter designation as a separate space (200A and 200B) so the SFFD will not be looking for room number not on the corridors.
- D. The shop drawings shall be provided with a list of labels, which indicate the associated text label for all of the initiating devices for the project.
- E. Access door hatches shall be marked with screwed on engraved phelonic labels on the exterior and interior in 3/4" font height with the type of devices (SD, HD, DD, etc) and the addresses of the device(s).
- F. The contractor shall contact the SimplexGrinnell technical representative to obtain the correct field as drawing as built labeling. Failure to do so will require proper labeling at no additional cost to the District.

## 2.05 ALARM INITIATING DEVICES

- A. Addressable signal action manual fire alarm station shall be provided next to the new fire alarm control panel in the Administration Area. The manual fire alarm stations shall be kept to a minimum or eliminated other than in the Administration Office as allowed by the California Building Code and California Fire Codes.
  - 1. Surface-mounted manual fire alarm stations shall mount on proper back-boxes specifically manufactured for the device (SimplexGrinnell LPZ 2975-9022). Semi-recessed stations shall mount on a standard electrical box. Operation of a manual fire alarm station shall cause its contacts to lock-in until manually reset and visually indicate an actuation (e.g., depressed lever).
  - 2. Manual fire alarm stations shall be mounted at a height of 48 inches on top of actuator above finished floor. Meet ADA 5 lb maximum pull force.
  - 3. If manual fire alarm stations are to be located in locations other than the Administration or faculty areas, provide tamperproof, clear Lexan shield and red frame that easily fits over the manual fire alarm stations.
- B. Addressable smoke detectors shall be provided where indicated.
  - 1. Addressable true alert smoke photoelectric smoke detectors with Addressable Sensor Base shall be provided where indicated. Mounted concealed detectors shall have a remote indicator light or L.E.D.
    - a. Smoke detectors shall be ceiling mounted.

- b. Sidewall mounting of smoke detectors shall be accepted only with COLLEGE OF MARIN pre-approval.
  - c. Smoke detectors shall be placed no closer than 3 feet from an air supply or air-return register.
  - d. Smoke detectors shall be located within 5 feet of doors having magnetic door holders to be released upon alarm.
2. Projected beam smoke detectors shall be provided where ceiling heights exceed 25 feet or a "waffle ceiling". The beam detector may be the reflector type to decrease the need for a transmitter and receiver. The detector shall be installed according to the manufacturer's instructions. Beam smoke detectors located in Gymnasiums shall be protected with an approved metal guard. If flush mounted use model #STI-9706, if surface mounted use model #STI-9707
  3. Duct-mounted true alert smoke detectors shall be provided with approved duct housings mounted on the exterior of the duct, and shall have perforated sampling tubes extended across the width of the duct and protrude outside the duct. The protrusion shall be sealed to prevent loss of air from the ductwork. Each mounted concealed detector shall incorporate an auxiliary relay with 1-N.O. and 1-N.C. contacts if location requires fan shutdown. Detectors installed outdoors shall be UL listed with the duct detector in an associated UL listed weatherproof enclosure.
  4. All fire alarm fan shut down functions shall be via listed fire alarm equipment. Fire alarm conditions shall shut down fans directly, not through a control system such as the Energy Management System.
  5. Access doors shall be provided by this contractor or his sub-contractor in the ductwork of sufficient size and location to allow viewing, cleaning and replacement of smoke detector sampling tubes. Space must be provided to remove and replace air duct sampling tubes, without removing the duct detector housing.
- C. Addressable true alert heat detectors with Addressable Base shall be provided in areas where environmental conditions exceed smoke detection parameters, such as bathrooms, etc. In areas containing sprinklers, heat detectors shall not be required. In areas where sprinklers are not installed heat detectors shall be provided, including attic and basement spaces. In all HD locations, 135-degree fixed temperature heat detectors should be utilized, except for kitchen locations where 200 degree fixed temperature heat detectors are to be used.
  - D. Addressable supervised interface modules shall be provided to monitor existing or new water flow valve(s) and valve supervisory switches. The wiring from the monitored device to the point-monitoring device shall send individual address to the fire alarm control panel.

## 2.06 NOTIFICATION APPLIANCE DEVICES

- A. Addressable audible and visible, notification appliance devices shall be provided so that the fire alarm can be heard and seen in all areas. The sound level shall be consistent with the requirements for audible and visible notification requirements of NFPA 72. Audible notification shall comply with the temporal three code. The programmer shall initially set the devices at LTemporal.
- B. Addressable visual alarm units may be individually mounted.



- C. Wall-mounted appliances shall be mounted such that the entire lens is not less than 80 inches and not greater than 96 inches above the finished floor as required by NFPA 72.
- D. The candela rating of the device shall be visible once installed.
- E. In all classrooms, the visual alarm unit shall be a minimum of 75 candelas.
- F. Horns mounted on the interior of each building, wall mounted appliances shall have their tops above the finished floor at heights of not less than 90 inches and below the finished ceiling at heights of not less than 6 inches as required by NFPA 72.
- G. Horns mounted on the exterior of each building shall be weather proof. Wheelock horns may be accompanied by a SimplexGrinnell LP Smart Sync Module so that audible synchronization for the site can be maintained.
- H. In gymnasiums, factory manufactured Lexan covers (STI 1217) shall be installed to protect the notification devices.
- I. The visual notification devices shall be fully synchronized throughout the entire site.

#### 2.07 NOTIFICATION APPLIANCE CIRCUIT POWER EXTENDER PANELS (TAC)

- A. The SimplexGrinnell LP IDNet TAC Power Extender panel shall be provided when auxiliary power panels are required. Each TAC panel shall be on the COMM channel. Each notification circuit shall have 10 percent spare capacity for future additions on that circuit. Battery back up shall be provided for 24 hours in standby and 5 minutes in alarm. Horns mounted on the interior of each building
- B. Fire alarm control panel shall be connected to offsite monitoring station via new dedicated telephone lines and addition of compatible DACT module.
- C. TAC panels shall be distributed though out the building to minimize wire run. Do not place TAC panels where there is possibility of moisture or Custodial closets. Place a smoke detector above the panel.

#### 2.08 CONTROL DEVICES

- A. New 24VDC magnetic door holders shall be provided where indicated. These magnetic door holders shall be connected to the fire alarm system.
  - 1. Electromagnetic door holders shall be wired so as to be de-powered 30 seconds after AC power failure at FACP.
  - 2. Surface mounted magnetic door holders shall mount on proper back boxes specifically manufactured for the device. Ordinary electrical junction boxes shall not be acceptable.
  - 3. If standard magnetic door holders cannot cover the required distance from the door to the wall, extensions from the manufacturer/contractor shall be provided to cover the distance.
  - 4. Wall mounted ED-1504-AQN5, if surface mounted use all weather 2X4 backbox, or floor mounted ED-1501-AQN5 Doorplate CS2595-5. District standard- No substitutions.

- B. Unless otherwise noted, auxiliary control functions in the field such as mechanical fan unites, elevator recall, smoke doors etc., shall be performed through the use of relay modules located within (3) feet of the equipment to be activated on deactivated.

#### 2.09 SUPERVISORY DEVICES

- A. Addressable supervised interface modules shall be provided to monitor new and existing sprinkler control valves and Post Indicator Valves (PIV's). The wiring from the monitored device to the point-monitoring device shall be a Style B electrically supervised circuit. The point monitoring device shall send an individual address to the fire alarm control panel.

#### 2.10 CENTRAL STATION MONITORING PANEL

- A. For central station monitoring two new telephone jacks (i.e. RJ31X) shall be provided and installed next to the FACP. The telephone jacks shall be connected to separate telephone lines serving the building.
- B. The programming of the panel shall be done by SimplexGrinnell LP Technicians. The contractor shall verify the correct operation of the telephone lines with the technicians when the panel is programmed. The dialer programming and connection must be scheduled and tested prior to calling for a pre or final test to confirm the dialers operation.

#### 2.11 SAFELINC MONITORING

- A. Each new SimplexGrinnell LP 4100ES panel shall be provided with SafeLinc monitoring module. The contractor shall provide and install at a minimum new CAT 6 cable from the new or existing COLLEGE OF MARIN LAN system to the new 4100ES. In addition, the contractor shall provide and install a new CAT-6 RJ-45 Jack on the cable and shall install an RJ-45 jack on the COLLEGE OF MARIN IT Patch Panel. A CAT-6 patch chord shall be provided to patch the data cable to the COLLEGE OF MARIN IT switch/router. The Data cable serving the Fire Alarm system shall be distinctly labeled on the Patch Panel. The contractor shall coordinate with the COLLEGE OF MARIN IT department on which port on the switch/router should be terminated.
- B. The contractor is to provide and install a new CAT-6 Jack within the SimplexGrinnell LP FACP and should test the newly installed cable for continuity from the jack to the patch panel. Data cable shall meet all current EIA/TIA requirements for CAT-6 cabling. The Simplexgrinnell LP technicians shall connect the CAT-6 Jack to the 4100ES panel and shall test the connection for proper operation. The contractor shall label the CAT-6 jack with the port address and router plug.

### **PART 3 EXECUTION**

#### 3.01 NEW CONSTRUTION

- A. Prior to the installation of the fire alarm system, a pre-construction meeting shall be held with the General Contractor, fire alarm sub-contractor, and/or the electrical contractor, if different from the fire alarm sub-contractor, PI, architect, and the COLLEGE OF MARIN team. The installing contractor shall obtain the signal card numbers from the Simplex Grinnell LP program technician prior to addressing and labeling devices in the field.
- B. Certification shall be required for all persons who perform work as electricians for contractors licensed as Class C-10 Electrical Contractors under the Contractor's State License Board Rules and Regulations. K The onsite electrician in charge shall be certified by the State of California to work on fire alarm systems.

- C. As part of the project, the fire alarm technician for the project shall be State of California certified. The fire alarm technician shall be responsible for assisting the contractor in completing the installation and overall testing of the fire alarm system.
- D. During installation, the General Contractor shall notify the COLLEGE OF MARIN Project Manager that the system is ready for inspection by the COLLEGE OF MARIN team at the following stages: conduit rough-in completion (before pulling wire), device connection and final acceptance. After each inspection, the COLLEGE OF MARIN team shall issue a report on their findings. This report shall be distributed to the General Contractor, PI, COLLEGE OF MARIN Project Manager and COLLEGE OF MARIN team. Any deficiencies noted in these reports shall be corrected before calling for the next subsequent inspection.

### 3.02 MODIFICATIONS

- A. In existing fire alarm systems where design modifications or additions are made, the new equipment must be compatible and CSFM listed with the existing fire alarm equipment. Modifications shall be integrated with the existing fire alarm system so that notification (horns and strobes) can be synchronized.
- B. Prior to working on the modifications of the fire alarm system, the contractor shall verify the existing conditions of the system and identify any deficiencies to the COLLEGE OF MARIN Project Manager. The existing fire alarm system should be free and clear of troubles prior to the contractor starting work unless otherwise agreed upon of an existing trouble by both parties.
- C. If the project intent plans to utilize any portion of the existing fire alarm systems, conduit, the contractor shall be responsible for providing a fire watch in areas where the existing fire alarm system is impaired and shall coordinate the fire watch with the COLLEGE OF MARIN project manager.

### 3.03 MAINTAINING SYSTEMS

- A. The contractor(s) must comply with California Fire Code Articles 9 and 87. Existing fire alarm system shall be maintained in occupied buildings until the new system is operation and accepted. A fire watch shall be provided at all times when the existing fire alarm system is non-operational during any fire alarm work or any other activity affecting the fire alarm system's normal operations. All duplicated portions of the existing system shall be removed after acceptance of the new system. Any and all existing equipment no longer being used after the installation of the new equipment shall be turned over to the District. Any equipment, the district elects not to retain shall be discarded by the Contractor.
- B. Existing fire alarm system conduit and existing device locations may be reused as part of the new fire alarm system if there are no occupants (i.e. staff or students) in the building during the installation portion of the project. Existing surface mount raceways may not be reused for fire alarm.
- C. At the conclusion of the project the contractor shall be responsible for the complete demolition and removal of all the existing fire alarm systems, including, but not limited to the FACP, Remote Power Supplies, Smoke Detectors, Heat Detectors, Pull Stations, Horns, Strobes, etc. The contractor shall review the demolished equipment with the district and provide any equipment to the district as request by COLLEGE OF MARIN. All other equipment and devices shall be disposed of by the contractor. The contractor shall be responsible for the proper disposal of all batteries. All exposed conduit no longer in use shall be removed and the walls patched to match existing. All concealed conduit no longer in use shall be abandoned in place. The contractor shall remove all existing wiring no longer in use.

### 3.04 WIRING AND CONDUIT CONFIGURATIONS

- A. All wire and cable shall be new and UL listed and/or approved for use in fire alarm signal systems per NFPA 70, Article 760. All wiring shall be in accordance with state and local electrical codes. No wire nuts allowed. All connections shall be from terminal to terminal. Use terminal blocks where needed. Use of device mounting box shall not be used as a junction box.
- B. The manufacturer shall provide recommendations as to wire size and type to be followed.
- C. Fire alarm drawings shall provide specific wiring direction for addressable systems. This will include the use of shielded and non-shielded twisted pair cable.
- D. Splices shall be kept at a minimum. Slices shall be made on terminal cabinets via terminal strips. All wire shall be identified on both ends, at splice locations and in all visible locations with a cable tag (including all junction and pullboxes).
- E. All fire alarm cables shall be labeled with the associated circuit number in all fire alarm terminal cabinets (FATC), in all fire alarm control panels (FACP) and in all remote power supplies.
- F. No fire alarm cables shall be terminated at the fire alarm control panel until all cables have been tested for continuity and are free from any grounds, faults or shorts.
- G. All cable used in underground raceways shall be listed for outdoor use. West Penn Aqua-Seal or equal shall be used for underground raceways. The underground raceways shall be verified in the field for use and access. Fiber optic cables shall be utilized whenever equipment allows.
- H. Tracer wires shall be installed in all underground conduits.
- I. No underground cables are to be spliced in underground pullboxes.
- J. All wiring components shall be UL listed. Wiring methods shall conform to NFPA 70, Section 760.
- K. Wet or Damp Locations
  - 1. All fire alarm devices or other equipment to be installed in wet or damp locations shall be listed for weatherproof applications. Wet locations shall include, but not be limited to outdoor installations, machine rooms subject to high humidity, damp shower rooms, custodial rooms and locations subject to steam releases.
  - 2. Addressable alarm electronic components shall be installed in a different location.
- L. Use COLLEGE OF MARIN standard color-code for fire alarm system conductors throughout the installation.
  - 1. The installation contractor shall submit for approval prior to installation of wire, a proposed color code for system conductors to allow rapid identification of circuit types, per School District standard.

### 3.05 TEST/FIELD QUALITY CONTROL

- A. The COLLEGE OF MARIN team shall be notified 72 hours prior to any and all acceptance testing of alarm systems, so monitoring of the fire alarm system can be initiated, and COLLEGE

OF MARIN team shall be schedules to attend the testing. The contractor will pay for expenses at \$100/hour/person attending a final test should more than three devices fail.

- B. Prior to the final acceptance test, the contractor shall perform a complete pre-test with the fire alarm vendor, the District's fire alarm technicians and their fire alarm consultant. The pre-test shall be for all fire alarm equipment and testing records of the pre-test shall be provided to ensure a successful final acceptance test. As part of the completion of work on the fire alarm systems, a full documented test of all components of the fire alarm system shall be performed. A representative from the COLLEGE OF MARIN team shall be present for the test. Any deficiencies reported by the district representatives and/or district consultant shall be corrected and re-tested prior to calling for the final inspection.
- C. A report certifying that the installation is complete, pre-tested and fully operational shall be developed and forwarded by the fire alarm technician to the COLLEGE OF MARIN Project Manager. The final acceptance test will not be scheduled until the pre-test documentation and NFPA-72, Record of Completion have been submitted to the COLLEGE OF MARIN project Manager.
- D. The contractor, COLLEGE OF MARIN Team, the PI and an authorized representative from each supplier of equipment shall be in attendance at the final acceptance test to make necessary adjustments. The final test shall include, but not be limited to:
  - 1. Activation of all initiating devices.
  - 2. Activation of every sprinkler control and monitoring device, with a test of the time of activation.
  - 3. Activation and visual check of every notification appliance device.
  - 4. Activation of all fire alarm controlled components. These shall include, but not be limited to, magnetic door holders, fan shutdowns, elevator recall, etc.
  - 5. A test of the system for electrical supervision, including detection of ground faults of the 24VDC system(s).
  - 6. The system(s) shall be placed on battery power for 24 hours before the scheduled acceptance test, so that the system can be verified for 24 hours of standby power and 5 minutes of notification signal operated on battery power.
  - 7. Confirmation that the dialer is receiving all required signals and that all points are reporting off-site in the correct manner.
- E. The contractor shall pay all overtime fees required by the PI and COLLEGE OF MARIN personnel for witnessing the acceptance test.
- F. After the final acceptance, NFPA 72, Record of Completion shall be signed by the PI, installing contractor and a factory certified technician, certifying that the fire alarm system has been installed, tested and will function in accordance with the manufacturer's specifications and the COLLEGE OF MARIN's requirements.
- G. Although acceptance testing is only for the portion of the school fire alarm system associated with the project, if any existing fire alarm signaling, notification or control circuit has even disrupted, then the contractor shall be responsible for testing 10 percent of the existing field devices to assure the PI and the COLLEGE OF MARIN team that the existing devices are functional. The 10% test should include 10% of the existing initiating devices and 10% of the

existing notification devices. If any of the ten percent fail, only the repaired devices need to be re-tested after they are repaired or replaced.

- H. IF the fire alarm installation or modification is in “phased” stages or if there are substantial corrections and additions to the scope of the project, then the contractor shall assume responsibility for subsequent testing and retesting of the fire alarm system installation. After the last phase of the fire alarm system has been completed and tested totally, ten percent of the previously completed phases are to be tested with the final tested phase.

### 3.06 WARRANTEE

- A. The contractor shall provide a two-year written warrantee against defects in material and workmanship (parts and labor) furnished under the project. The cost of such warrantee shall be part of the project cost. The PI shall sign off on the system after passing final acceptance test of the system (with the presence of an COLLEGE OF MARIN representative) and the electrical/fire alarm contractor shall provide written documentation of the final test. The district shall in addition (optional) perform its own complete test to determine the working order of the fire alarm system. The warrantee period starts when the entire project is 100% completed (two years after acceptance, as defined by the fully signed NFPA 72 document). During the warrantee period, the District shall monitor the site and request service as required through the appropriate installer. Prior to the expiration of the warranty period, the district may conduct a 100% test of the work performed. Any deficiencies found during that testing shall be corrected under the warranty agreement.
- B. The warrantee shall include all necessary material, travel, labor and parts to replace defective components or materials at the job site. The contractor shall commence repair of any “in warrantee” defects within 24 hours of notification of such defects. Warrantee service shall be supervised by a qualified factory trained service representative.
- C. The contractor shall make allowance in his warrantee to cover diagnosis of system defects, which might ultimately be the responsibility of others to correct. When this occurs, the COLLEGE OF MARIN’s representative and other affected trades shall be notified.
- D. The warrantee shall include all necessary factory and field software required to perform the specified tasks.

### 3.07 AS-BUILT PROJECT RECORDS

- A. Before acceptance of work and final inspections, the contractor shall provide project record “As-Built” drawings in AutoCAD, reflecting any and all changes and deviations made to the fire alarm system during construction. The drawings shall indicate the following:
  - 1. As-built physical routing of wires to devices, including junction box locations.
  - 2. As-built riser diagram showing the zoning of initiating devices and notification appliances.
  - 3. As-built panel wiring diagrams of the fire alarm control panel(s).
  - 4. Floor plan with final room number showing each alarm initiating device (1-10 for device 10 on IDnet 1 and 2-10 for device 10 on IDnet 2, etc.) and card number per notification appliance, TAC panel, and control point with their respective address identification number for addressable device number 5 on card 3, channel 1, branch 1 is 3-1-5. Device number 5 on card 3, channel 1 branch 2 cannot exist as it would have the same ID number as the device on branch 1. The devices on the branches must have higher numbers than the devices on the previous branches.

5. Submitting the original shop drawings back to the fire alarm vendor and specifying "no changes" shall not be acceptable. Submitted as-builts should be true as-builts and kept throughout the duration of construction.
6. The acceptance testing records.
7. A complete set of Operation and Maintenance Manuals.
8. Identify on the drawings, the system address for every addressable device. Signals shall be sequentially numbered as the address of the controlling module.
9. Indicate on the point to point wiring diagrams, interconnecting wiring within the panel between modules, and connecting wiring (conduit size and conductor number and AWG size) to the field device terminals.
10. Provide mounting details of FACP and other boxes to building structure, showing fastener type, sizes, material and embedded depth where applicable.

### 3.08 INSTALLATION

- A. Perform work in accordance with the requirements of NEC, NFPA 70, and NFPA 72.
- B. Fasten equipment to structural member of building or metal supports attached to structure, or to concrete surfaces.
  1. Use clamping devices for attaching to structural steel, or when clamping is impractical, obtain written authority to weld or to drill.
  2. Fasten equipment to concrete or masonry with expansion anchors.
  3. Fasten equipment to drywall by screws into studs, and to metal wall panels by weld studs, bolts or self-taping metal screws.
  4. Do not install conduit raceways and boxes in positions that interfere with the work of other trades.
  5. Attach nameplates on panels or other components as specified.
  6. Use of plastic anchors is prohibited.
- C. All fire alarm wiring shall be in conduits.

### 3.09 CONDUIT

- A. Design conduit run & size between device, control panel and fire alarm equipment. Minimum conduit size shall be  $\frac{3}{4}$  inch.
- B. Use rigid steel and 12" or less above floor where subject to mechanical damage, PVC coated rigid steel installed in concrete floors or walls, and installed exposed to the weather. Electrical metallic tubing may be used elsewhere. Schedule 40 rigid PVC conduits for underground outside of building.
- C. Install #14 gage galvanized pull wire or 1/8 inch polyethylene rope in conduit installed for future use, and seal the ends.
- D. Install concealed conduits as directly as possible and with bend radii as long as possible. Where allowed on drawings, install exposed conduit parallel with or at right angles to building lines. Where conditions permit, maintain continuous exposed horizontal runs along walls at minimum height of 9 feet above floor level or grade.

- E. Permanently label or mark at both ends with conduit number of each wire as shown on the drawings. Conduit and junction box labels shall be permanent and conform to the requirements of the National Electric Code, Art. 760.
- F. Make elbows offsets and bends uniform and symmetrical. Bend conduit with approved bending devices.
- G. Cut conduit ends square, ream and remove burrs. Conduit shall be clean, dry, and free of debris. Immediately after installation, plug or cap exposed ends with standard accessories until wires are pulled.
- H. Use galvanized steel lock nuts for attachments to enclosures except threaded hubs may be used where permitted by the NEC. Threadless fittings will not be permitted for rigid conduit. Use Erikson type coupling with running threads.
- I. Use one-hole clamps equipped with clamp backs to secure conduits.
- J. Install without moisture traps wherever possible. Where practicable, provide drain holes in pull boxes or fittings at low points in systems and remove burrs from drilled holes.
- K. Use flexible conduit to made connections to equipment subject to vibrations. Use liquid tight flexible metal conduit where conduit and fittings are installed outdoors or exposed to moisture or chemical fumes indoors. Flexible conduit may be used in lengths not exceeding four feet for other equipment, with the approval of the acceptance inspector.
- L. Set up joints in conduit installed in concrete, underground, or exposed to weather, with high temperature, anti-seize, conductive thread lubricant and sealant.
- M. Seal openings around conduit at exterior wall penetrations and penetrations of walls forming boundaries between adjoining ventilation zones, using specified sealant. Make all seals waterproof and finish flush with surrounding wall surfaces.
- N. Use hangars with 3/8 inch rods for 2 inch conduit or smaller. If conduit is suspended on rods more than 2 feet long, conduit shall be rigidly braced to prevent horizontal motion or swaying.
- O. Apply sealing compound in conduit at box or enclosure nearest exterior wall penetration on both sides of wall.
- P. Where routing is parallel with hot water or steam pipes; conduits shall not be installed within six inches of the pipe covering. When routing is not parallel with pipes, it is acceptable to install within six inches providing the do not touch the pipes.
- Q. Use PVC coated rigid steel conduit below on-grade floor slabs.
  - 1. Install PVC coated rigid steel conduit in accordance with the manufacturer recommendations. Coating damaged during handling or installation shall be repaired using PVC paint recommended by the conduit manufacturer.

### 3.10 BOXES, ENCLOSURES AND WIRING DEVICES

- A. Boxes shall be installed plumb and firmly in position.
  - 1. Extension rings with blank covers shall be installed on junction boxes where required.
  - 2. Junction boxes served by concealed conduit shall be flush mounted.



3. Upon initial installation, all wiring outlets, junction, pull and outlet boxes shall have dust covers installed. Dust covers shall not be removed until wiring installation when permanent dust covers or devices are installed.
4. Paint all covers of junction boxes red.

#### 3.11 FIRE ALARM TERMINAL CABINET

- A. Provide where shown on drawings and for area larger than 10,000 square per floor, one or more central terminal cabinets location of cabinet to be approved by the Architect) for building zone area fire alarm wiring distribution. Cabinets shall be hinged, with hasp for pad locks and panel I.D.

#### 3.12 DEVICES

- A. Relays and other devices to be mounted in auxiliary panels are to be securely fastened to avoid false indications and failures due to shock or vibration.
- B. Wiring within subpanels shall be arranged and routed to allow accessibility to equipment for adjustment and maintenance.

#### 3.13 TEMPORARY LABEL OF EXISTING FIRE ALARM DEVICES

- A. Provide labels for all existing fire alarm devices and equipment disable during construction. Label "wording" per COLLEGE OF MARIN standard.

#### 3.14 NAMEPLATE

- A. Provide nameplate per School District standard.

#### 3.15 TEST EQUIPMENT

- A. The contractor shall furnish all test equipment as required to program devices and test the system, specifically an intelligent device tester and programmer.

#### 3.15 TRAINING

- A. The successful bidder shall supply on-site training at the Owner's facility. The training shall have a duration of four (4) hours and shall be conducted by a full time employee of the Fire Alarm System Manufacturer.
  1. The training shall cover operation and maintenance of the fire alarm system.

END OF SECTION

**LANDSCAPE & SITE MAINTENANCE**

**PART 1 GENERAL**

1.01 SUMMARY

- A. Furnish all labor, materials, facilities, transportation and services to complete all landscape maintenance and related work as shown on the Drawings and specified herein.
- B. Scope of work:  
The general extent of landscape maintenance can include, but may not be limited to the following:
  - 1. Tree, shrub, and ground cover
  - 2. Irrigation systems
  - 3. General site clean-up
- C. Related sections can include, but may not be limited to:
  - 1. Section 32 80 00 - Irrigation
  - 2. Section 32 90 00 - Landscaping

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. State of California Department of Transportation Standard Specifications, Current Edition.

1.03 QUALITY ASSURANCE

- A. Control of work: Comply with Section 5 of the Standard Specifications.
- B. Control of materials: Comply with Section 6 of the Standard Specifications.
- C. The Maintenance Contractor shall be experienced in horticulture and landscape maintenance, practices and techniques, and shall provide sufficient number of workers with adequate equipment to perform the work during the Landscape Maintenance Period.

1.04 LANDSCAPE MAINTENANCE PERIOD

- A. Landscape Maintenance Period shall be **90** calendar days.
- B. Continuously maintain the entire project area during the progress of the work, during the specified Landscape Maintenance Period or until Final Acceptance of the project by the Owner's Representative.
- C. Landscape Maintenance Period shall not start until all elements of construction, planting and irrigation for the entire project are in accordance with Contract Documents. A prime requirement is that all turf and landscape areas shall be planted and that all turf areas shall show an even, healthy stand of "sod-like" turf which shall have been mown twice. If such criteria are met to the satisfaction of the Owner's Representative, a written notification shall be issued to establish the effective beginning date of Landscape Maintenance Period. Additionally, all elements contained on the Pre-maintenance Punch-list shall have been completed to the satisfaction of the Owner's Representative. The Landscape Maintenance period shall, per the discretion of the Owner's Representative, be allowed to start and finish at different times in different areas as applicable.
- D. Any day of improper maintenance, as determined by the Owner's Representative, shall not be credited as an acceptable Landscape Maintenance Period day. The Landscape Maintenance Period shall be extended on a day-for-day basis should this occur until proper maintenance, as determined by the Owner's Representative, is being performed.

- E. Contractor shall secure the project site against trespass, vandalism or theft during the Landscape Maintenance Period subject to the discretion of the Owner's Representative.

1.05 GUARANTEE

- A. All work executed under this section shall be guaranteed against any and all poor, inadequate or inferior materials and/or workmanship, as determined by the Owner's Representative, for the entire Landscape Maintenance Period and for a period of one year after Final Acceptance of project.
- B. The contractor shall install all replacement material in conformance with the Contract Documents.

1.06 FINAL ACCEPTANCE

- A. Upon completion of all project work, including Landscape Maintenance Period, the Owner's Representative will, upon written request from the contractor (2 working day minimum notice), make an observation to determine conformance with the Contract Documents.
- B. If, at the final project observation, work is found at variance with the Contract Documents, or is otherwise unacceptable, the Owner's Representative shall issue a punch-list of items requiring attention to the contractor. The contractor shall repair, replace or otherwise correct all non-compliant work, continue Landscape Maintenance Period, and make another written request to the Owner's Representative to verify punch-list completion. If punch-list is found to be incomplete, or if site is still found to be unacceptable, the contractor shall be back-charged as necessary for all additional observations required to issue Final Acceptance. All replacement materials and installations shall be in accordance with the Contract Documents. Remove rejected work and materials immediately from project. Prior to Final Acceptance, contractor shall provide the Owner's Representative with all Record Drawings and written Guaranty Statements in accordance with the Contract Documents.

**PART 2 PRODUCTS**

2.01 MATERIALS

- A. All materials used shall either conform to Specifications in other sections or shall otherwise be acceptable to the Owner's Representative. The Owner's Representative shall be given a monthly record of all herbicides, insecticides and disease control chemicals used.
- B. Maintenance fertilizer: shall be "Gro-Power High Nitrogen" as available through Gro-Power, Inc. (800) 473-1307, and shall contain the following chemical analysis (or approved equal):

14%	nitrogen
4%	phosphoric acid
9%	potash

**PART 3 EXECUTION**

3.01 MAINTENANCE

- A. General: Proper maintenance, including watering, weeding, mowing, edging, fertilization, repairing and protection shall be required until entire project is finally accepted, but in any event for a period of not less than the specified Landscape Maintenance Period.
- B. Watering: Water appropriately (based on plant type) to insure vigorous and healthy growth until work is accepted. Water or irrigate in a manner to prevent runoff or erosion. When hand watering, use a "water wand" to break the water force.

- C. Weeding: Entire project site shall be kept free of weeds at all times. Control new weed growth with pre-emergent herbicides. If weeds develop, use legally approved herbicides.
  - 1. No herbicide shall be used without the Owner's Representative prior consent. Use only herbicides in accordance with manufacturer'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.
  - 2. Disease and Pest Control: Disease and insect damage shall be controlled by the use of fungicides and insecticides, subject to the prior consent of the Owner's Representative. Mole and gopher mitigation shall be accomplished using legal means other than poison baits.
- D. Pruning:
  - 1. Trees: Prune trees to select and develop permanent scaffold branches; to eliminate narrow v-shaped branch forks that lack strength; to reduce potential toppling and wind damage by thinning out crowns; to maintain a natural appearance and to balance crown with roots. Prune only as directed by the Owner's Representative.
  - 2. Shrubs: The objectives of shrub pruning are the same as for trees. Shrubs shall not be clipped into balled or boxed forms unless such is required by the design.
  - 3. All pruning cuts shall be made to lateral branches, buds or near flush with the trunk. "Stubbing" or heading cuts shall not be permitted.
  - 4. Only skilled workers shall perform pruning work in accordance with standard horticultural pruning practices. Remove from the project all pruned branches and material. Remove and replace any plant material excessively pruned or malformed resulting from improper pruning practices at no additional cost to the Owner.
- E. Staking: Stakes shall remain in place through the maintenance and guaranty periods and shall be periodically inspected and adjusted by the contractor to prevent rubbing that causes bark wounds, loosen for proper growth or other appropriate reasons.
- F. Protection: The contractor shall maintain protection of all planting areas until Final Acceptance. Damaged areas shall be repaired or replaced at the contractor's expense. Install a temporary maintenance fence (4' blaze orange with steel driven stakes or acceptable equal) around all turf areas for the entire length of Landscape Maintenance Period.
- G. Trash: Remove trash in all project areas plus adjacent pedestrian walkways and parking areas.
- H. Replacement: Refer to the Guaranty portion of this Section.
- I. Fertilizing: Fertilizing: Turf shall be fertilized on day 45 and 85 after initial installation. Turf shall be fertilized with 20 lbs of fertilizer per 1,000 square feet.

### 3.02 TURF MAINTENANCE

- A. Mowing and Edging
  - 1. Turf shall not be allowed to exceed three (3) inches in height and shall not be mown shorter than one and one half (1.5) inches in height. Turf shall be well established, free of bare spots and weeds, and of a "sod-like" quality to the satisfaction of the Owner's Representative prior to Final Acceptance.
  - 2. Excess grass clippings shall be picked up and removed from the site and premises.
  - 3. Let turf areas dry out enough so that mower wheels do not skid, tear or mark the surface.
  - 4. Edges shall be trimmed at least twice monthly or as needed for neat appearance. Clippings shall be completely removed and disposed of.
- B. Watering: Turf shall be watered at such frequency as weather conditions require to replenish soil moisture below root zone and to establish healthy turf areas.
- C. Disease Control: Control all turf diseases throughout the Landscape Maintenance Period with

legally approved fungicides and herbicides.

- D. Weed Control: Control all broad leaf weeds with selective, legally approved herbicides. No herbicide shall be used without the prior consent of the Owner's Representative.
- E. Replacement: At or near the end of specified Landscape Maintenance Period, a final observation of turf areas shall be made. Remove deceased areas and unhealthy stands of turf from the site; do not bury into the soil. Replant all applicable areas with materials and in a manner acceptable to the Owner's Representative.

### 3.03 IRRIGATION SYSTEM

- A. System Observation: The contractor shall visually check all systems for proper operation on a weekly basis and make all necessary repairs. All equipment shall be adjusted as necessary for proper coverage and function.
- B. Controllers: Program automatic controllers for appropriate seasonal water requirements. Perform a full instruction session in the presence of the Owner's designated maintenance personnel demonstrating programming, system testing, trouble shooting, etc. Include instructions on how to turn off system in case of emergency.
- C. Repairs: All repairs made to the irrigation system shall be at the contractor's expense. All repairs shall be made within twenty-four (24) hours.

### 3.04 FIELD QUALITY CONTROL

- A. Final Review: At, or near the end of specified Landscape Maintenance Period, the contractor shall make written request for a final review and the work shall be reviewed for conformance with the Construction Documents. If work is not accepted at time of review, a punch-list of items requiring attention will be issued to the contractor for correction. The Landscape Maintenance Period shall be extended at contractors sole cost as necessary. Upon completion of the punch-list the contractor shall again make written request for review. If, upon re-visiting the site, it is found that the punch-list has not been completed, the review shall end and the contractor shall be back-charged for all additional visits.
- B. All re-inspections required due to contractor not being prepared or non-conformance with the Construction Documents shall be back charged to the contractor.
- C. Final Acceptance: When work is found to be in conformance with the Contract Documents, subject to the discretion of the Owner's Representative, a statement of Final Acceptance shall be issued to the contractor.

END OF SECTION

SECTION 31 13 00

**TREE PROTECTION**

**PART 1 GENERAL**

1.01 SUMMARY

- A. Scope of work:
  - 1. Protect, prune, irrigate and maintain all existing trees and other vegetation not designated for removal.
  
- B. Related sections can include, but may not be limited to:
  - 1. Section 02 41 00 - Site Clearing and Demolition
  - 2. Section 31 01 90 - Landscape Maintenance
  - 3. Section 31 20 00 - Earthwork
  - 4. Section 31 23 00 - Excavation, Backfill and Compaction
  - 5. Section 32 80 00 - Irrigation
  - 6. Section 32 90 00 - Landscaping
  - 7. Section 33 11 00 - Domestic Water Systems
  - 8. Section 33 31 00 - Sanitary Sewerage
  - 9. Section 33 40 00 - Storm Drainage

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. American Joint Committee on Horticultural Nomenclature (AJCHN), Standardized Plant Names
- B. American Association of Nurserymen, Inc. (AAN), American Standard for Nursery Stock.
- C. Sunset Western Garden Book, Lane Publishing CO.
- D. Agricultural Code of California.

1.03 SUBMITTALS

- A. Conform to requirements of front end Sections and/or applicable Division One and Division Two specifications, General Conditions and Special Provisions.
- B. Submit four (4) copies of product data or "cut-sheets" for all products proposed for use.

**PART 2 PRODUCTS**

2.01 MATERIALS

- A. Protective Fencing:
  - 1. Protective fencing shall consist of four foot (4') to six foot (6') high "blaze orange" plastic fencing material installed with metal posts and wire ties. Fence fabric shall be accepted by Owner's representative.
  - 2. Metal posts shall be accepted by Owner's representative.

**PART 3 EXECUTION**

3.01 GENERAL

- A. Protect, prune, irrigate and maintain all existing trees and other vegetation not designated for removal.

- B. At a minimum, protect existing all existing trees and other vegetation not designated for removal from the following:
  - 1. Breaking, cutting and/or skinning of branches, bark and/or roots
  - 2. Stockpiling of building materials, soil or trash within dripline
  - 3. Vehicular traffic and parking
- C. Trees (and other vegetation not designated for removal) that become damaged during the life of the project shall be repaired or replaced by the contractor at no cost to the Owner subject to the discretion of the Owner's representative.

### 3.02 PROTECTIVE FENCING

- A. Prior to site clearing, demolition or grading, install acceptable protective fencing around all existing trees and other vegetation not designated for removal one (1) foot beyond dripline or as directed by Owner's representative.
- B. Locate structural roots by hand probing and set posts with care to preclude root damage.
- C. Space protective fencing posts at 6'-0" centers maximum and securely attach fabric.
- D. Maintain protection until Final Acceptance of project.
- E. Install signage indicating that the protective fencing and area within shall not be disturbed.
- F. When work is required within the fenced protection area, submit a written request to the Owner's representative stating work to be performed and approximate time of completion. No work shall be allowed within the protected fenced area without the prior acceptance by the Owner's representative. Fencing shall be replaced promptly following completion of said work.

### 3.03 GRADING AND TRENCHING

- A. The earth surface within protective fencing shall not be altered except as acceptable to the Owner's representative. Any grading or trenching necessary within the dripline shall be done by hand per the discretion of the Owner's representative.

### 3.04 IRRIGATION

- A. Provide and/or maintain irrigation for all existing trees and other vegetation not designated for removal as necessary to promote healthy, vigorous growth. Weekly watering shall occur with a 20 minute soak equivalent to 100 gallons per tree.

### 3.05 ROOT PRUNING

- A. Root pruning shall consist of a smooth, final cut and shall be performed wherever a root 2" or more in diameter has been broken or severed.

### 3.06 CANOPY PRUNING

- A. All pruning shall be completed by a tree care contractor or under supervision of a licensed arborist.
- B. Prune all existing trees to remain and be protected per the following:
  - 1. Proper removal of all dead branches and live "stubs" three (3) inches and over in diameter.
  - 2. Removal of all broken or loose branches and other debris lodged in trees and shrubs.
  - 3. Removal of all live branches which interfere with tree structural strength and healthful development. These include:
    - a. Limbs which rub and abrade a more "important" or dominant branch, and as

- directed by the Owner's representative
- b. Limbs of weak structure
- c. Limbs with twigs and foliage obstructing the development of more "important" branches, as directed by the Owner's representative
- d. Branches near the end of a limb which may produce more weight than the limb is likely to support
- e. Branches conflicting with building or vehicular roadways
- 4. Removal of all branches located between grade level and ten (10) feet above grade over pedestrian walkways.
- C. Selectively prune branches as deemed necessary by the Owner's representative.

3.07 PRUNING REPAIRS

- A. Prune and treat any damaged area as directed by the Owner's representative.

3.08 CLEAN-UP

- A. Branches, trimmings and debris remaining upon completion of each operation shall become property of the Contractor and shall be promptly removed from the site.

END OF SECTION



SECTION 31 20 00

**EARTHWORK**

**PART 1 GENERAL**

1.01 SUMMARY

- A. Furnish all labor, materials, equipment, facilities, transportation and services to complete all earthwork and related work shown on the Drawings and/or specified herein.
- B. Scope of work:  
The general extent of the earthwork is shown on the Drawings and can include, but is not necessarily limited to the following:
  - 1. Topsoil stripping, stockpiling, and replacement into planting areas
  - 2. Rough grading
  - 3. Filling and backfilling to attain required grades
  - 4. Excavating for paving, footings and foundations
  - 5. Adherence to requirements, recommendations and/or Best Management Practices (BMPs) for storm water management as may be outlined in the Project Storm Water Pollution Prevention Plan (SWPPP), or as required by governing agencies
- C. Related sections can include, but may not be limited to:
  - 1. Section 02 41 00 - Site Clearing and Demolition
  - 2. Section 31 13 00 - Tree Protection
  - 3. Section 32 11 00 - Base Courses
  - 4. Section 32 90 00 – Landscaping

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. 2016 California Building Code (CBC)
- B. American Society for Testing and Materials (ASTM):
  - 1. D 1557-07 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort
- C. California Occupational Safety and Health Standards (OSHA):
  - 1. Article 6 - Excavations and Shoring.
- D. State of California Department of Transportation Standard Specifications, Current Edition

1.03 SUBMITTALS

- A. Conform to requirements of front end Sections, Submittals and/or applicable Division One and Division Two specifications, General Conditions and Special Provisions.
- B. Project Record Drawings:
  - 1. Conform to applicable Division One and Division Two specifications, General Conditions and Special Provisions.
  - 2. Accurately record locations of utilities remaining, re-routed utilities, new utilities, and newly discovered utilities by horizontal dimensions, elevations, inverts, and slope gradients.
- C. Import Topsoil
  - 1. It is the contractor's responsibility to determine if import topsoil is required on the project.
  - 2. As applicable, contractor shall submit four (4) samples (1 quart-sized "zip-lock" plastic bag min. each) of proposed import topsoil(s) with their current accompanying fertility and

structure analyses, prepared by a recognized soil and plant laboratory, for review and acceptance by the Owner's representative prior to use.

#### 1.04 QUALITY ASSURANCE

- A. Geotechnical Investigation:
  - 1. A geotechnical investigation report may have been prepared for use on this project. The recommendations contained therein have been incorporated into the Contract Documents.
  - 2. The Owner may designate and pay for the services of a Geotechnical Engineer to make recommendations based on the soil conditions encountered the results of field and laboratory tests, and observations of the activities performed under this Section.
  - 3. Compaction densities specified for structural fills under footings, slabs, or pavements shall be determined in accordance the geotechnical engineer's written recommendations.
- B. Certification:
  - 1. The contractor shall certify source and type of backfill and topsoil proposed to be incorporated into the work, at the request of the Owner's Representative.
  - 2. The contractor shall certify elevations of excavations, footings, subgrades and finish grades with the use of a Licensed Surveyor, at contractor's expense, at the request of the Owner's Representative.
- C. Control of Work: Conform to Section 5 of the Standard Specifications.
- D. Control of Materials: Conform to Section 6 of the Standard Specifications.

#### 1.05 PROTECTION

- A. Protect all existing structures, fences, roads, sidewalks, paving, curbs, and other items as necessary from earthwork activity.
- B. Protect above or below grade utilities which are to remain.
- C. Protect trees to remain in accordance with Section 31 13 00 - Tree Protection (as applicable).
- D. Repair damage to any existing site features which are to remain. Repair and restoration shall be equal to quality and appearance of prior condition and to the satisfaction of the Owner's representative.

#### 1.06 PROJECT / SITE CONDITIONS

- A. Underground Utilities: Unknown buried utility lines may exist. If encountered, notify Owner's representative immediately for direction and re-direct work to avoid delay.
  - 1. Cooperate and coordinate with Owner's representative and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility Owner.
  - 2. Do not interrupt existing utilities serving occupied facilities without proper notification to, and written direction from, Owner's representative.
- B. Wet Conditions: No grading operations shall be conducted when excessively wet conditions exist as determined by the Owner's representative.
- C. Contractor shall provide de-watering equipment as required to continue scheduled operations and provide optimum working conditions at no additional cost to Owner.
- D. Dry Conditions: Contractor shall apply sufficient water to materials during construction to properly compact materials and control dust. Contractor shall provide dust control in conformance with Section 10 of Standard Specifications and shall provide water to subgrades as necessary to

achieve compaction goals.

1.07 GRADE STAKES AND LINES

- A. All grading and subgrading shall be controlled by contractor-installed intermediate grade stakes and lines necessary to obtain the finished grade elevations shown or implied in the Drawings. Subgrade and finish grade surfaces shall conform to the control planes established by these grade stakes and lines.
- B. Protect and maintain all existing bench marks, monuments and other reference points. If disturbed or destroyed, they shall be replaced at the Contractor's expense.
- C. Contractor shall set temporary bench marks as necessary to properly complete construction operations.

1.08 SURVEYING

- A. Contractor shall be responsible for hiring a licensed professional surveyor to perform all surveying, layout and staking. Contractor shall be responsible for informing Owner's representative (minimum two (2) working days notice) when staking and layout is scheduled so that a review of completed chalk lines and staking can take place.

1.09 TOLERANCES

- A. Refer to related specification sections for grading tolerances of specified improvements.

**PART 2 PRODUCTS**

2.01 MATERIALS

- A. Select material for structural backfill shall be in accordance with applicable portions of Section 19 - Earthwork, of the Standard Specifications, unless modified by this section or by recommendations and requirements of the Project Geotechnical Report.
- B. Topsoil: Excavated material from top 6 inches (maximum) of existing grade (unpaved areas) and/or acceptable import material graded free of roots and rocks larger than two inches, subsoil, debris, weeds, large mats of grass, and other deleterious material.
- C. Subsoil: Excavated material below top 6 inches of existing grade, graded free of clay clods larger than 6 inches, rocks larger than 3 inches, and debris.

**PART 3 EXECUTION**

3.01 PREPARATION

- A. Identify all required lines, levels, contours, datum, control points and property lines required to properly establish limits of work.
- B. Verify elevations of critical existing grades as noted on Drawings and as directed by Owner's representative. Notify Owner's representative of discrepancies prior to start of work and re-direct work to avoid delay.
- C. Identify all known below grade utilities. Stake and flag locations.
- D. Identify and flag surface grades and utilities.
- E. Contact Underground Service Alert (USA) (800-642-2444) and local utility companies to verify

locations of existing utilities a minimum of two (2) working days prior to excavation.

- F. Refer to Geotechnical report for soil/subgrade preparation for synthetic turf base.

### 3.02 PROTECTION

- A. Maintain and protect existing utilities remaining which pass through work area.
- B. Perform excavation work near utilities by hand. Provide necessary protection as the work progresses.
- C. Provide and maintain protection for walks, curbs, drains, trees, corners of structures, etc., as necessary to prevent damage.
- D. Barricade and/or cover open excavations occurring as part of this work and post with warning lights to the satisfaction of the Owner's representative. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
- E. Keep adjacent properties, streets and drives clean of any dirt, dust, or stains caused by earthwork operations.
- F. Upon discovery of unknown utility or concealed conditions, notify the Owner's representative immediately and re-direct work to avoid delay.
- G. Control dust on and near the work, and on and near off-site borrow areas.
  - 1. Thoroughly moisten surfaces as required to prevent dust from being a nuisance to the public, neighbors, and concurrent performance of any other activities that may occur on the site.
  - 2. Non-compliance with proper dust control measures shall be grounds for issuance of "stop work" orders by the Owner's representative until such time as satisfactory measures can be implemented.

### 3.03 TOPSOIL EXCAVATION

- A. Excavate topsoil from all areas scheduled for paving or rough grading and stockpile material in neat wind-row(s) in location(s) that have been previously established which will cause least interference to construction operations, and which is/are acceptable to the Owner's representative.
- B. Do not excavate topsoil that has become wetted to, or beyond, the saturation point that would be required for optimum compaction.
- C. Stockpile topsoil in wind-row(s) of a height not to exceed 8 feet, protect from erosion, and cover as necessary to prevent formation of dust.
- D. Topsoil excavation shall occur for the entire area or per field. No topsoil excavation shall occur for partial field areas without approval.
- E. Topsoil staging areas shall be clearly defined and protected from other grading and utility operations.

### 3.04 ROUGH GRADING

- A. Grade site subsoil to establish proper subgrade elevations and site contouring as described or implied in the Drawings:
- B. Contouring:
  - 1. Construct landforms depicted in the Drawings to the satisfaction of the Owner's

- representative.
  - 2. "Round-off" all tops of slopes.
  - 3. "Feather" all toes of slopes.
- C. Compaction: Compact subgrade for the specific areas as follows unless otherwise noted:
  - 1. **Areas to be planted:** Maximum eight inch (8") loose lifts to be between 85% and 90% relative compaction.
  - 2. **Areas to be paved:** Shall be as follows:
    - a. Maximum eight inch (8") loose lifts to at least 90% relative density.
    - b. Additional lifts should not be placed if the previous lift did not meet the required density, relative compaction, moisture content or if the soil conditions are not stable.
    - c. All fill soils shall be compacted to no less than 90% relative compaction at moisture content of 2 to 4 percent for pavement area.
    - d. Compacted subgrade should be non-yielding under construction traffic, including a loaded ten-wheel truck such as a water or dump truck, in all pavement areas. Removal and subsequent replacement of some material (i.e. areas of excessively wet materials, unstable subgrade, or pumping soils) may be required to obtain the minimum 95 percent compaction to the recommended depth of 12 inches.
    - e. Subgrade preparation for pavement areas shall extend laterally for at least two feet beyond the edge of pavement.
  - 3. **Areas to receive synthetic turf:** Shall be as follows:
    - a. Maximum eight inch (8") loose lifts to at least 90% relative density. The top 12" shall be compacted to at least 95 percent relative compaction.
    - b. Additional lifts should not be placed if the previous lift did not meet the required density, relative compaction, moisture content or if the soil conditions are not stable.
    - c. All fill soils shall be compacted to no less than 90% relative compaction at moisture content of 2 to 4 percent for pavement area.
    - d. Compacted subgrade should be non-yielding under construction traffic, including a loaded ten-wheel truck such as a water or dump truck, in all pavement areas and synthetic turf subgrade areas. Removal and subsequent replacement of some material (i.e. areas of excessively wet materials, unstable subgrade, or pumping soils) may be required to obtain the minimum 95 percent compaction to the recommended depth of 12 inches.
    - e. All above information will be superseded by recommendation made within Geotechnical report.
- D. Remove all excess subsoil material from site and dispose of in a legal manner. Refer to "Material Storage" below.
- E. Entire project or individual field area shall be rough graded at one time. No earthwork operation shall occur for partial field areas without receiving direction from the Owner or prior written approval from the Owner.

### 3.05 EXCAVATION

- A. Remove and dispose of all miscellaneous materials encountered when establishing required grade elevations:
  - 1. Miscellaneous materials can include but are not limited to: pavements and other obstructions, underground structures, utilities, abandoned irrigation materials, and other materials encountered per the discretion of the Owner's representative.
- B. Stability of Excavations:
  - 1. Comply with any applicable recommendations contained within the Project Geotechnical Report and requirements of agencies having jurisdiction.
  - 2. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.

- C. De-watering: Provide and maintain, at all times during construction, ample means and devices with which to promptly remove and properly dispose of water from any source entering structural excavation, pipe trenches, or other excavations. All costs incurred from de-watering activities shall be paid for by the contractor.
- D. Excavation for Structures:
  - 1. Conform to elevations and dimensions shown in the drawings within a tolerance of plus-or-minus one tenth (0.10') of a foot, and extending a sufficient distance from footings and foundations to permit placing and removal of concrete form-work, installation of services, and quality review.
- E. Excavation for Pavements:
  - 1. Cut surface under pavements to comply with cross-sections, elevations, and grades as shown in the Drawings.
- G. Excavation for Synthetic Turf:
  - 1. Refer to Geotechnical report for excavation at synthetic turf fields.
- G. Material Storage: Stockpile satisfactory excavated materials where appropriate, until required for use.
 

Stockpile topsoil and subgrade soil in separate piles.

Place, grade and shape stockpiles for proper drainage.

  - 1. Locate and retain stockpiles away from edge of excavations.
  - 2. Dispose of excess soil material in a legal fashion after it has become evident that the material is no longer needed on the project and is of no value to the Owner.

### 3.06 TOPSOIL PLACEMENT

- A. Thoroughly cross-rip all subgrade soil to a depth of twelve (12) inches prior to placing the specified thickness of topsoil back into all applicable planting areas. Secure review and acceptance of ripping depth prior to placement of topsoil. Refer to Section 32 90 00 – Landscaping for this process.
- B. Topsoil placement requirements for planting areas shall be as follows:
  - 1. All planting areas: Shall contain or receive a minimum of six (6) inches of clean, acceptable topsoil.
  - 2. Topsoil shall not be placed until all earthwork and utility operations are complete.
  - 3. Topsoil shall be installed at one time for entire project or entire field area. No partial placements shall occur.
- C. Compact topsoil to 84% to 89% relative density.
- D. Maintain all slopes and gradients established during subgrade operations and shape landforms to satisfaction of the Owner's representative.
- E. Refer to Section 32 90 00 - Landscaping for finish grading information and finish grades at edge of planting areas and hardscape.

### 3.07 TOLERANCES

- A. Shall conform to Conform to Section 26 of the Standard Specifications, unless more stringent requirements in these Contract Documents are provided, in which place the more stringent tolerances shall govern. Refer to specification front end sections for additional project requirements.

3.08 FIELD QUALITY CONTROL

- A. The Owner Representative shall review and accept work at the following stages:
1. Topsoil removal and stockpile.
  2. Grading plan for project. Plan shall provide strategy for grading sequence for entire site at one time or by field. Limits and sequence shall be reviewed and coordinated.
  3. Cross ripping of subgrade shall be reviewed and observed.

END OF SECTION

SECTION 31 23 00

**EXCAVATION, BACKFILLING, AND COMPACTING**

**PART 1 GENERAL**

1.01 SUMMARY

- A. Furnish all labor, materials, equipment, facilities, transportation, and services to complete all excavation, trenching, backfilling, compaction, and related work as shown on the Drawings and/or specified herein.
- B. Scope of work:  
The general extent of all trenching, backfilling, and compaction is shown on the Drawings and may include, but is not necessarily limited to, the following:
  - 1. Sanitary Sewer Line Installation
  - 2. Storm Drainage System Installation
  - 3. Potable Water Line Installation
  - 4. Irrigation System Installation
  - 5. Electrical Conduit Installation
  - 6. Paving Installation
  - 7. Synthetic Turf Installation
- C. Related sections can include, but may not be limited to:
  - 1. Section 31 13 00 - Tree Protection
  - 2. Section 31 20 00 - Earthwork
  - 3. Section 32 12 16 - Asphalt Concrete Paving
  - 4. Section 32 13 13 - Portland Cement Concrete
  - 5. Section 32 80 00 - Irrigation
  - 6. Section 32 90 00 - Landscaping
  - 7. Section 33 11 00 - Domestic Water Systems
  - 8. Section 33 40 00 - Storm Drainage

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. State of California Department of Transportation Standard Specifications, Current Edition.

1.03 SUBMITTALS

- A. Project Record Drawings:
  - 1. Conform to requirements of applicable Division One and Division Two specifications, General Conditions and Special Provisions.
  - 2. Accurately record locations of utilities remaining, re-routed utilities, new utilities, and newly discovered utilities by horizontal dimensions, elevations, inverts and slope gradients as practical.

1.04 QUALITY ASSURANCE

- A. Control of Work: Comply with Section 5 of the Standard Specifications.
- B. Control of Materials: Comply with Section 6 of the Standard Specifications.
- C. Trench Safety: Comply with applicable portions of Sections 5 and 7 of the Standard Specifications and requirements of other agencies having jurisdiction (OSHA etc.).

1.05 PROJECT/SITE CONDITIONS



- A. Wet Conditions: No trenching shall occur when excessively wet conditions exist in the opinion of the Owner's Representative.
- B. Dry Conditions: Contractor shall provide dust control in conformance with Section 10 of Standard Specifications and shall provide water to work as necessary to achieve compaction goals.

#### 1.06 SEQUENCING AND SCHEDULING

- A. Refer to all other Contract Documents, determine the extent and character of related work, and properly coordinate work specified herein with that described elsewhere to produce a complete, operational installation.

### **PART 2 PRODUCTS**

#### 2.01 MATERIALS

- A. Provide materials as described below free of debris, roots, wood, scrap material, vegetative matter, refuse, soft unsound particles, or other deleterious and objectionable materials.
- B. Select Backfill: Select backfill material shall be sand conforming to Section 19-3.02E(2) of the Standard Specifications.
- C. Native Backfill: Native backfill shall be acceptable soil material excavated from the project site. This material will be considered unclassified and no testing other than for compaction will be required. Additional material required for backfill shall be acceptable to the Owner's Representative.
- D. Permeable Material: Permeable material shall be Caltrans Class II permeable rock material.
- E. Aggregate Base: Refer to Section 32 11 00 – Base Courses.

### **PART 3 EXECUTION**

#### 3.01 PREPARATION

- A. General:
  - 1. Prior to trenching, the contractor shall pothole existing utilities at locations indicated or implied on the plans, where new piping or utilities will cross existing utilities of uncertain depth to determine the elevation of the utility in question and ensure that the new line will clear the potential obstruction.
  - 2. The Contractor shall mark out all construction areas in white, non-permanent paint and contact Underground Service Alert (U.S.A.) (800-642-2444) to locate all known utilities a minimum 48 working hours prior to any excavation.
  - 3. Should an existing crossing utility present an obstruction, the proposed line shall be adjusted as acceptable to the Owner's Representative to clear the existing utility.

#### 3.02 TRENCH EXCAVATION

- A. General:
  - 1. Excavation shall include removal of all water and materials that interfere with construction. Remove any water which may be encountered in the trench by pumping or other methods prior to pipe laying, bedding and backfill operations. Trenches shall be sufficiently dry to permit proper jointing and compaction.
  - 2. It shall be the contractor's responsibility to direct vehicular and pedestrian traffic safely through or around the work area at all times.
  - 3. The contractor shall relocate, replace, reconstruct or repair, to an "as-was" or better condition, all surface or subsurface improvements which are in the line of construction or which may be damaged, removed, disrupted or otherwise disturbed by the construction activities. Except as

specified in other Sections or shown in the Drawings, this provision applies to all surface improvements of whatever nature such as walls, fences, above-grade utilities, landscaping, paving, structures, or other physical features whether shown in the Drawings or not and to all subsurface improvements such as utilities which may be indicated in the Drawings or marked in the field. The contractor shall connect such utilities to existing systems and leave all in a workable and operating condition. The cost of this work shall be considered as included in other items of work and no additional compensation will be allowed.

4. The maximum allowable trench width at the top of pipe shall be 18 inches greater than the pipe diameter.
5. New utility trenches extending deeper than 2 feet below finish grade should be located a minimum of five feet away from foundations.

B. Existing Paving Areas:

1. Existing asphalt concrete paving over new trenches shall be sawcut, removed, and legally disposed. Existing asphalt concrete paving shall be neatly sawcut one foot (1') greater on each side than the trench width. If a longitudinal pavement joint or edge of pavement is located within three feet of the limit of excavation, all intervening pavement shall be removed and replaced after completion of backfilling. If concrete curb and/or gutter are to be replaced, the adjacent existing asphalt concrete paving shall be sawcut two feet (2') from the edge of concrete curb and/or gutter.
2. Existing Portland cement concrete paving over new trenches shall be sawcut to a minimum depth of 1-1/2 inches in straight lines either parallel to the curb or at 90 degree angles to the alignment of the sidewalk prior to being broken out. No section to be replaced shall be smaller than 30 inches in either length or width. If the sawcut would fall within 30 inches of a construction joint, expansion joint, or edge, or within 12 inches of a score mark, the concrete shall be removed to the joint, edge, or mark.

C. Walkway Areas:

Backfill for trenches or other excavations within walkway areas should be compacted in six inch (6") maximum layers, unless otherwise noted, with hand-held tampers to assure adequate subgrade support.

D. Compacted Fill Areas:

Where trenches must be excavated in compacted fill, these trenches shall be backfilled with the fill materials excavated and re-compacted in the layers and to the density specified for the particular area.

E. Open Trench:

1. No trench shall be left in an open un-protected condition at the end of the day. At the end of the day any open trench shall be protected in a manner acceptable to the Owner's Representative.
2. Provisions for trench crossings and access shall be made at all street crossings, driveways, water gate valves, and fire hydrants unless otherwise acceptable to the Owner's Representative.

F. Excavated Material:

1. All excavated material not required for backfill or of value to the Owner shall be removed and legally disposed of by the contractor at no additional cost.
2. Material excavated in streets and roadways shall be laid alongside the trench no closer than two feet from the trench edge and kept trimmed to minimize inconvenience to public traffic.
3. Provisions shall be made whereby all storm and waste water can flow uninterrupted in gutters or drainage channels to drainage structures.
4. Excavated material shall not be stored on existing landscaping or paving without provisions being made to protect the surface below from being stained or otherwise adversely affected.

G. Shoring

1. Should excavations extend more than 4 feet below existing ground surface, shoring will be required.
2. Excavations can be sloped back to an inclination of 1.5 horizontal to 1 vertical as an option for

shoring in these conditions.

3. Utility trenches shall be excavated according to accepted engineering practices following OSHA.

### 3.03 PIPE BEDDING

#### A. Stabilization of Trench Bottom:

When the trench bottom is unstable due to wet or spongy foundation, trench bottom shall be de-watered as necessary. The Owner's Representative shall determine the suitability of the trench bottom and the amount of sand, gravel, or crushed rock needed to stabilize the soft foundation.

### 3.04 TRENCH BACKFILL AND COMPACTION

#### A. General:

1. Construct backfill in two operations (initial and final).
2. Do not backfill where the foundation material in trench is already saturated, except as acceptable to the Owner's Representative. Provide a minimum cover as may be specified.
3. Where settling greater than the tolerance allowed for grading occurs in trenches and pits due to un-stable subgrade material, excavate to the depth necessary to rectify the problem, then backfill and compact the excavation as specified herein and restore the surface to the required elevation.
4. For utilities under roads, streets, concrete slabs or other areas to be paved and synthetic turf subgrade areas, place final backfill in 6-inch maximum loose lifts. Compact all backfill surrounding ducts, conduits, pipes and other structures, including the top 12-inches of subgrade to 95 percent of ASTM D1557 maximum density. Backfill to permit the rolling and compacting of the completed excavation with the adjoining material providing the specified density necessary to enable rock placement of paving of the area immediately after backfilling has been completed.

#### B. Initial Backfill:

1. Prior to trench backfill, the condition of the trench and laying of pipe shall be acceptable to the Owner's Representative.
2. Select backfill material shall be used as initial backfill for all utilities except irrigation piping, unless otherwise noted. After the pipe has been properly laid and accepted by the Owner's Representative, select backfill material shall be placed on both sides of the pipe and a min of 6" above pipe and compacted to the depth shown in the Drawings.
3. Compaction: The initial backfill material shall be hand tamped in layers not exceeding four inches (4") in uncompacted depth and shall be brought up uniformly on both sides of the pipe to avoid bending or distortional stress. After handtamping, the relative compaction of the initial backfill material shall be at least 95% relative compaction.

#### C. Final Backfill:

1. Native backfill material shall be used for final backfill, unless otherwise noted.
2. Compaction: Final backfill compaction shall be by mechanical means with backfill material placed in layers not exceeding six inches (6") in loose depth. Each layer shall be thoroughly compacted before succeeding layers are placed. The use of machine tampers, except manually held types, shall not be permitted. Final backfill shall be compacted to a relative compaction of 95% for paving areas and synthetic turf subgrade areas. In planting areas, provide acceptable topsoil to required depth compacted to 85% to 89% maximum relative compaction.

#### D. Jetting: No jetting shall be allowed.

### 3.05 TRENCH SURFACING

#### A. General:

1. In unimproved areas, the trench surface shall be restored to its original condition. No mounds of earth shall be left along the trench.
2. All backfill shall be flush with adjoining grade in a firm, unyielding position with no visible

settling for a period of one year after Final Acceptance.

B. Paved Areas:

1. Temporary surfacing acceptable to the Owner's Representative shall be laid within one day after backfilling (except where the contractor elects to place permanent surfacing within this time period) until permanent paving is installed.

END OF SECTION

SECTION 32 11 00

**BASE COURSES**

**PART 1 GENERAL**

1.01 SUMMARY

- A. Furnish all labor, materials, equipment, facilities, transportation and services to complete all base course preparation, installation and related work as shown on the Drawings and/or specified herein.
- B. Scope of work:  
The general extent of the base course work is shown on the Drawings and may include, but is not necessarily limited to, the following:
  - 1. Grading and compaction of subgrade soil for areas to receive pavement, structures, base material, etc.
  - 2. Furnishing and placing of aggregate base material.
- C. Related sections can include, but may not be limited to:
  - 1. Section 31 20 00 - Earthwork
  - 2. Section 32 12 16 - Asphalt Concrete Paving
  - 3. Section 32 13 13 - Portland Cement Concrete

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. State of California Department of Transportation Standard Specifications, Current Edition.

1.03 SUBMITTALS

- A. Conform to the requirements of applicable Division One and Division Two Specifications, General Conditions and Special Provisions.
- B. Submit material certificates of compliance and/or sieve analyses for all products and materials proposed to be used in work covered by this Section.

1.04 QUALITY ASSURANCE

- A. Control of Work: Conform to Section 5 of the Standard Specifications.
- B. Control of Materials: Conform to Section 6 of the Standard Specifications.

1.05 PROJECT/SITE CONDITIONS

- A. Wet Conditions: No subgrade preparation or base material placement shall occur when excessively wet conditions exist in the opinion of the Owner's Representative.
- B. Dry Conditions: Contractor shall provide dust control in conformance with Section 10 of Standard Specifications and shall provide water to subgrades and base courses as necessary to achieve compaction goals.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Materials shall be stockpiled on site in locations that, in the opinion of the contractor, cause least interference with construction operations and as acceptable to the Owner's Representative.

- B. Materials shall not be stockpiled in proposed planting areas.
- C. Protect materials from segregation, contamination and wind and water erosion.

#### 1.07 SEQUENCING AND SCHEDULING

- A. Work of this section shall not proceed until all underground utilities and irrigation sleeving has been installed and accepted.
- B. Contractor shall schedule work so that installation of paving/surfacing occurs no later than five (5) working days after placement and proper compaction of base materials. Base materials left unpaved longer than this time period shall be subject to testing and re-compaction at the contractor's expense.

### **PART 2 PRODUCTS**

#### 2.01 MATERIALS

- A. Aggregate Base:  
Aggregate base shall be Class 2, 3/4" maximum material conforming to Section 26-1.02A of the Standard Specifications. No recycled materials will be accepted for all-weather track surfacing, tennis court surfacing, or building pad areas. All other paving and surfacing using aggregate base can use recycled materials.

### **PART 3 EXECUTION**

#### 3.01 SUBGRADE PREPARATION

- A. Preparation of subgrade shall conform to Section 6 of the Standard Specifications and as described in section 31 20 00.
- B. Remove unsuitable subgrade material as necessary and replace with suitable material or aggregate base per the discretion of the Owner's Representative.

#### 3.02 BASE MATERIAL PLACEMENT

- A. Conform to Section 26 of the Standard Specifications.
- B. Obtain acceptance of subgrade preparation work prior to placing base material thereon.
- C. Place and compact base material in six inch (6") maximum lifts unless otherwise noted. Compaction shall be at least 95 percent relative compaction.
- D. Base material shall be moisture conditioned to between optimum and 3 percent above optimum prior to placement and compaction.

#### 3.03 TOLERANCES

- A. Conform to Section 26 of the Standard Specifications, unless more stringent requirements in these Contract Documents are provided, in which place the more stringent tolerances shall govern.

#### 3.04 CLEAN-UP OF WORK AREA

- A. The contractor shall remove and legally dispose of excess materials/spoils and debris from the job site on a daily basis.

3.05 PROTECTION OF FINISHED PRODUCT

- A. The contractor shall provide lighted barricades, signs and other devices as necessary to prevent damage to finished base courses.

END OF SECTION

SECTION 32 12 16

**ASPHALT CONCRETE PAVING**

**PART 1 GENERAL**

1.01 SUMMARY

- A. Furnish all labor, materials, equipment, facilities, transportation, and services to complete all asphalt paving, and related work as shown on the Drawings and/or specified herein.
- B. Scope of Work: The general extent of the asphalt paving is shown on the Drawings and may include, but is not necessarily limited to, the following:
  - 1. Asphalt Concrete installation
  - 2. Header Board installation
- C. Related sections can include, but may not be limited to the following:
  - 1. Section 12 93 00 - Site Furnishings
  - 2. Section 31 20 00 - Earthwork
  - 3. Section 32 11 00 - Base Courses
  - 4. Section 32 13 13 - Portland Cement Concrete
  - 5. Section 33 40 00 - Storm Drainage

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. State of California Department of Transportation Standard Specifications, Current Edition

1.03 PROTECTION OF WORK

- A. Curbs and other work shall be covered with suitable material and protected from staining or injury by equipment and contact with oil, emulsion, and asphalt. All manholes, catch basins, and other gratings shall be covered with suitable material so that no asphalt or emulsion will come in contact with the inside walls or floors of the structures. Any damage to such work shall be repaired and/or replaced at the contractor's expense.

1.04 SUBMITTALS

- A. Conform to requirements of applicable Division One and Division Two specifications, General Conditions and Special Provisions.
- B. Submit cut-sheets, mill certificates, certificates of compliance etc. for all products proposed for use on the project.

1.05 QUALITY ASSURANCE

- A. Control of Work: Conform to Section 5 of Standard Specifications.
- C. Control of Materials: Conform to Section 6 of Standard Specifications.

1.06 SEQUENCING AND SCHEDULING

- A. Time delay between placement and compaction of base material and installation of asphaltic concrete shall not be more than 5 calendar days. Base material left unpaved longer than this time period shall be subject to testing and re-compaction at the expense of the contractor.



## 1.07 GENERAL REQUIREMENTS

- A. Asphalt paving surfaces shall have positive drainage as indicated on the Drawings. Upon completion of the work, paved areas included in this section shall be subject to a water drainage test. Areas that fail to drain properly, as determined by the Owner's Representative, shall be corrected and repaired at no additional cost. If repaired, the entire surface shall have a seal coat applied at contractor's cost. Type of seal coat will be determined by the Owner's Representative.
- B. Asphalt concrete paving shall be free from excessive segregation (gaps between aggregate visible at 3/16" or larger), cracking, potholes, raveling, slippage, depressions, corrugations, or other defects at the date of completion and acceptance of the project.
- C. All repairs shall be made within fifteen calendar days of notification at the expense of the contractor.

## PART 2 PRODUCTS

### 2.01 ASPHALT CONCRETE PAVING

- A. Paving Asphalt Binder: Shall be PG 64-10, conforming to Section 92 of the Standard Specifications.
- B. Prime Coat: Liquid asphalt to conform to the requirements for SC-70 liquid asphalt as per Section 93 of the Standard Specifications.
- C. Tack Coat: Asphaltic emulsion to be penetration type conforming to the RS-1 (or SS-1, if seal coat is specified) requirements of Section 94 of the Standard Specifications.
- D. Aggregates (all aggregates in asphalt mix to be virgin material in track surfacing and tennis court surfacing areas):
  - 1. Aggregate for all surfaces shall be 1/2 inch medium per Section 39 of the Standard Specifications, unless as noted below.
  - 2. Tennis Court Surfacing Areas: Aggregate for shall be 3/8 inch maximum or No. 4 maximum aggregate per Section 39 of the Standard Specifications.

2.02 CONCRETE EDGE BANDS / WOOD HEADER: As detailed and shown on Drawings.

### 2.03 AGGREGATE BASE

- A. Aggregate base shall conform to Section 32 11 00 Base Courses.

## PART 3 EXECUTION

### 3.01 EDGE BAND / WOOD HEADER INSTALLATION

- A. Install as to conform with shapes, lines, dimensions and grades shown on Drawings.
- B. All radii shall be smooth and constant with properly aligned tangent points.

### 3.02 INSTALLATION

- A. Conform to Sections 37 and 39 of Standard Specifications.
- B. Prime Coat: Apply specified material to compacted base at a rate of 0.25 gallons per square yard.

- C. Tack Coat: Apply specified material to all vertical surfaces of existing pavement, curbs, and header boards.
- D. Asphaltic Concrete:
  - 1. Place and compact in accordance with Section 39 of the Standard Specifications.
  - 2. Base lifts shall not exceed 2 inches.
  - 3. Surface lift shall not exceed 2 inches.
- E. Asphalt concrete shall be compacted to a minimum of 96 percent of the maximum laboratory compacted (Hveem) unit weight.

3.03 EQUIPMENT

- A. Spreading and rolling equipment shall be in accordance with Section 39-3.03 of the Standard Specifications.
- B. Spreading and compaction shall be in accordance with Section 39-3.04 of the Standard Specifications.

END OF SECTION

SECTION 36 12 36

**SLURRY SEAL**

**PART 1 GENERAL**

1.01 SUMMARY

- A. This work shall consist of mixing and spreading of slurry seal on existing pavement or surface. Slurry seal shall conform to the requirements of Section 37-2, "Slurry Seal," of the Caltrans Specifications, except as modified herein.
- B. Scope of Work: The general extent of the asphalt slurry seal is shown on the Drawings and may include, but is not necessarily limited to, the following:
  - 1. Asphalt Concrete installation
- C. Related sections can include, but may not be limited to the following:
  - 1. Section 32 13 13 - Portland Cement Concrete
  - 2. Section 12 93 00 - Site Furnishings

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. State of California Department of Transportation Standard Specifications, current edition

1.03 PROTECTION OF WORK

- A. Curbs and other work shall be covered with suitable material and protected from staining or injury by equipment and contact with oil, emulsion, and asphalt. All manholes, catch basins, and other gratings shall be covered with suitable material so that no asphalt or emulsion will come in contact with the inside walls or floors of the structures. Any damage to such work shall be repaired and/or replaced at the contractor's expense.

1.04 SUBMITTALS

- A. Conform to requirements of applicable Division One and Division Two specifications, General Conditions and Special Provisions.
- B. Submit cut-sheets, mill certificates, certificates of compliance etc. for all products proposed for use on the project.

1.05 QUALITY ASSURANCE

- A. Control of Work: Conform to Section 5 of Standard Specifications.
- B. Control of Materials: Conform to Section 6 of Standard Specifications.

1.06 GENERAL REQUIREMENTS

- A. Asphalt paving surfaces with slurry seal shall have positive drainage as per existing conditions. Upon completion of the work, paved areas included in this section shall be subject to a water drainage test. Areas that fail to drain properly, as determined by the Owner's Representative, shall be corrected and repaired at no additional cost.
- B. Slurry seal shall be free from excessive segregation (gaps between aggregate), cracking, potholes, raveling, slippage, depressions, corrugations, or other defects at the date of completion and acceptance of the project.

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- C. All repairs shall be made within fifteen calendar days of notification at the expense of the contractor.

**PART 2 PRODUCTS**

2.01 SLURRY SEAL

- A. Shall be State Standard Type II.

2.02 ASPHALT EMULSION

- A. Asphalt emulsion shall be cationic "quick setting" CQS1h grade and conform to Section 94, "Asphaltic Emulsions," of the Caltrans Specifications.

2.03 AGGREGATE

- A. Aggregate shall meet the requirements of a Type II grading and conform to Section 37- 2.02C, "Aggregate," of the Caltrans Specifications except as modified herein. Aggregate shall be of sound, durable crushed stone with no round particles, and shall be of volcanic in origin. The percentage composition by weight of the aggregate shall conform to the following gradings:

Sieve Size	Percentage Passing
3/8"	100
No. 4	90-100
No. 8	65-90
No. 16	40-70
No. 30	25-50
No. 200	5-15

- B. The composition of dry aggregate in the slurry seal shall be 13% to 18% by weight of the theoretical asphalt content. Rate of application shall be 14 lb. to 16 lb. per square yard.

2.03 ADDITIVE

- A. Slurry seal shall contain carboxilated polymer latex such as poly-chloroprenemethacrylic acid latex with polyvinyl alcohol or approved equivalent. The amount of latex shall be between two percent (2%) and three percent (3%) by weight of the asphalt residue content. Poly-chloroprene-methacrylic acid latex shall meet the following requirements:

Test	Requirement
Total Solid, % Min.	47
Average Particle Size, μm	0.30
pH at 77°F (25°C)	7
Brookfield Viscosity at 77°F (25°C)	350-500
Mechanical Stability, Min	650

**PART 3 EXECUTION**

3.01 MIXING AND SPREADING EQUIPMENT

- A. Mixing and spreading equipment shall be in accordance with Section 37-2.05, "Mixing and Spreading Equipment," of the Caltrans Specifications, and as specified herein.
- B. The slurry seal spreading and mixing equipment shall be equipped with the following:

1. A burlap drag not shorter than 18 inches or longer than 24 inches in length. The drag shall be replaced when it loses its flexibility.
2. A calibrated emulsion tank with a stick gauge or other measuring device that allows for quick accurate measurement of the volume.
3. Gauges or approved means of measurement shall be provided on the equipment so that the proportional rates of aggregate, water and asphalt emulsion can be checked at intervals determined by the Engineer.

### 3.02 CALIBRATION/DEMONSTRATION

- A. The Contractor shall calibrate the spreader vehicle(s) to be used on the project to the approved mix design prior to their arrival at the job site, and shall furnish the Engineer a copy of the calibration settings for each vehicle. Thereafter, no adjustments in the aggregate and emulsion settings shall be made without the approval of the Engineer.
- B. The Contractor shall demonstrate the ability to mix and apply slurry in a satisfactory manner and to the approved mix design with each spreader vehicle. The Contractor may not begin work until the ability to apply slurry as specified is demonstrated to the Engineer.

### 3.03 SURFACE PREPARATION

- A. Surface to receive slurry seal shall be prepared in accordance with the requirements specified for preparing surfaces to receive asphaltic emulsion as specified in Section 37- 2.06, "Placing," of the Caltrans Specifications.
- B. Power sweepers shall be required to sweep from face of curb to face of curb or, for those streets without curbs, between the edges of street pavement. This shall involve a minimum of three passes with a power broom street sweeper (Mobile or equivalent).
- C. Pavement missed by or inaccessible to broom sweepers shall be swept clean by other approved methods. Contractor shall provide whatever compressed air or other approved cleaning methods necessary to remove all dirt and loose material from the pavement.
- D. All existing raised pavement markers and thermoplastic markings shall be removed and disposed of by the Contractor. Said removal shall not occur sooner than 2 days prior to the day that the sealing is performed.

### 3.04 APPLICATION AND WORKMANSHIP

- A. The slurry seal shall be mixed, spread, and placed in accordance with the provisions of Section 37- 2, "Slurry Seal," of the Caltrans Specifications, with the following exceptions and additions:
  1. The slurry seal shall not be applied when either atmospheric or pavement temperature is 55 degrees Fahrenheit and falling but may be applied when either the atmospheric or pavement is 45 degrees Fahrenheit and rising. The slurry seal shall not be applied during periods of abnormally high relative humidity. Slurry seal shall not be applied when raining or foggy.
  2. The slurry seal mixture shall not be applied prior to 8:00 A.M. Also, the slurry seal mixture shall not be applied after 1:00 P.M. unless approved by the Engineer. Approval of applications after 1:00 P.M. will only be for the purpose of completing the section of work then underway. Beginning a new section of work after 1:00 P.M. will not be permitted.
  3. The surface shall be fogged with water directly preceding the spreader. The slurry mixture shall be of the desired consistency when deposited on the surface. Total time of mixing shall not exceed four (4) minutes. A sufficient amount of slurry shall be carried in all parts of the spreader at all times so that complete coverage is obtained. No lumping, balling or unmixed aggregate shall be permitted. No segregation of the emulsion and aggregate fines from the coarse aggregate will be permitted. If coarse aggregate settles

- to the bottom of the mix, the slurry will be removed from the pavement. No excessive breaking of the emulsion will be allowed in the spreader box. No streaks such as caused by oversize aggregate will be left in the finished pavement. Ridges (especially at existing raised pavement markers) and wash-boarding in the finished product will not be allowed.
4. The slurry seal shall be placed at a rate to produce 14 to 16 pounds of aggregate per square yard for Type II slurry, unless approved by the Engineer prior to start of work. The completed mixture shall be such that the slurry seal mixture has proper workability and will permit traffic flow within one hour after placement without the occurrence of bleeding, raveling, polishing, separation or other distress, and prevent the development of bleeding, raveling, polishing, separation, or other distress within 30 days after its placement. Section 5 Slurry Seal 82 January 2012
  5. Asphaltic emulsion shall be added at a rate of between 13 to 18 percent by weight of the dry aggregate. The quality of asphaltic emulsion to be used in the slurry seal mixture will be determined from the design asphalt binder content, as approved by the Engineer, and the asphalt solids content of the asphaltic emulsion finished.
  6. The slurry seal mixture shall be applied to overlap the lip of gutter; this overlap is not to exceed beyond two inches (2") from the lip of gutter toward the face of curb. On streets that have no concrete curb and gutter, the slurry seal shall extend to the edge of street as designated by the Engineer. Any application or spillage beyond this two-inch limit shall be removed or cleaned up by the Contractor to the satisfaction of the Engineer. Gutter spills shall be cleaned immediately.
  7. Longitudinal joints shall be at the crown of the street or at the edge of travel lanes.
  8. Neither excessive buildup nor unsightly appearance shall be permitted on longitudinal or transverse joints. Burlap drags shall be used.
  9. Approved squeegees shall be used to spread slurry in non-accessible areas to the slurry mixer. Care shall be exercised in leaving no unsightly appearance from handwork.
  10. At any time the quality of the mix or workmanship is not to the satisfaction of the Engineer, the job shall be discontinued until a correction is made which is satisfactory to the Engineer.
  11. A sand blotter shall be spread at selected intersections and where required by the Engineer, to accommodate pedestrian or vehicular traffic until slurry sets. Sand blotter shall be placed by broadcasting slurry aggregate lightly so not to cause any displacement of wet slurry seal. Sand blotters at intersections shall be swept within 24 hours of placement or sooner if directed by the Engineer.
  12. Any traffic control devices (barricades, cones, or signs), which are moved in the process of applying the slurry, are to be returned to a proper position by the Contractor as soon as possible.
  13. All areas shall be rolled by a self-propelled, 10-ton pneumatic roller with a tire pressure of 50 psi, equipped with a water spray system. The surfaced areas shall be subjected to a minimum of two (2) full coverage passes by the roller. Rolling should not commence until the slurry has cured enough so that it will not pick up on the tires of the roller but before the slurry has set up.
  14. Wheel tracks, footprints, and other undesired markings in the slurry seal shall be repaired to the satisfaction of the Engineer.
  15. Treated areas will be allowed to cure until such time as the Engineer permits their opening to traffic.

### 3.05 FINISHING AND SWEEPING

- A. Loose aggregate remaining after the slurry seal has set shall be swept up and disposed of the day after it was placed. All streets shall be reswept two weeks and again six weeks after the completion of the slurry seal to remove any loose aggregate.

### 3.06 PRESERVATION OF PROPERTY

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- A. Immediately preceding the slurry seal application, the Contractor shall cover all grates, slotted manholes, and other appurtenances on and adjacent to the pavement that would allow the entry of the sealing materials; mask with roofing paper, all closed manhole covers, water and gas valve box covers, monuments, monument boxes, etc.; and remove all existing raised pavement markers, thermoplastic pavement markings.
- B. Drainage inlets shall be uncovered and cleaned to the satisfaction of the Engineer as soon as the slurry seal sets. The other surface utilities shall be uncovered and cleaned the following day after completion of the slurry seal at each location. If they are not uncovered within this time frame, no additional seal shall be placed until they are uncovered.
- C. Gutters, curbs, sidewalks, driveways, shoulders and other structures adjacent to the pavement to be slurry sealed shall be cleaned of excess seal to the satisfaction of the Engineer.

### 3.07 TESTING

- A. Samples of the slurry seal will be taken directly from the slurry unit(s) at a minimum rate of one sample per mixing unit per each day's use. Consistency and residual asphalt content tests shall be made on the samples and compared to the specifications. Tests will be run by the Contractor and at the expense of the Contractor. If any two successive tests on the mix from the same machine fail, the use of the machine shall be suspended. It will be the responsibility of the Contractor, at his own expense, to prove to the Engineer that the problems have been corrected and that the machine is working properly.
- B. When tests for an area indicate that the application is outside the specified limits, then one of the following remedies shall be applied unless approved otherwise by the Engineer:
  - 1. A deduction shall be made from the bid amount paid per foot yard for the area, or;
  - 2. The area shall receive an additional slurry seal at the Contractor's expense.

END OF SECTION

SECTION 32 13 13

**PORTLAND CEMENT CONCRETE**

**PART 1 GENERAL**

1.01 SUMMARY

- A. Furnish all labor, materials, equipment, facilities, transportation, and services to complete all concrete and related work as shown on the Drawings and/or specified herein.
- B. Scope of work:  
The general extent of the concrete work is shown on the Drawings and may include, but is not necessarily limited to the following:
  - 1. Vertical Curbs and Seatwalls
  - 2. Curbs and Gutters
  - 3. Mowbands and Edge bands
  - 4. Flatwork, Slabs and Walkways
  - 5. Expansion, Deep Score and Score Joints
  - 6. Misc. Footings
  - 7. Reinforcement and/or Doweling
- C. Related sections can include, but may not be limited to:
  - 1. Section 12 93 00 - Site Furnishings
  - 2. Section 31 20 00 - Earthwork
  - 3. Section 32 11 00 - Base Courses
  - 4. Section 32 80 00 - Irrigation
  - 5. Section 32 90 00 - Landscaping
  - 6. Section 33 40 00 - Storm Drainage

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. State of California Department of Transportation Standard Specifications, Current Edition
- B. California Building Code 2016

1.03 SUBMITTALS

- A. Conform to applicable Division One and/or Division Two specifications, General Conditions and Special Provisions.
- B. Submit cut-sheets, mill certificates, certificates of compliance etc. for all products proposed for use on the project.

1.04 QUALITY ASSURANCE

- A. Concrete
  - 1. Conform to applicable Division One and/or Division Two specifications, General Conditions and Special Provisions.
  - 2. All formwork, joint patterns, base material, reinforcement and other miscellaneous items such as "dobies" and ties shall be reviewed and accepted by the Owner's Representative prior to pouring concrete. Contractor shall have any and all such items in place and shall give a minimum of two (2) working day lead-time notice to Owner's Representative when scheduling the review request. Contractor shall also schedule and allow a minimum of two (2) working days after review for possible modifications to concrete preparation work, at no cost or delay to the project.



3. The Owner's Representative shall at all times have access to any off-site batch plant or quarry supplying materials for subject project and trucks en route to the project site. The Owner's Representative may at any time request slump tests and secure samples of concrete, cement, aggregates or other materials. All applicable materials shall be provided by the contractor at no additional cost to the Owner.
4. Any specified review or observation by the Owner's Representative of the concrete work shall be requested by the contractor at least two (2) working days prior to the need for the review or observation.
5. Finishes and colorants other than the concrete darkening agent (see Part 2 Products) are called out in the Drawings. A four foot by four foot (4' x 4') sample of all concrete colorants (including concrete darkening agent) and finishes shall be poured by the contractor in the field for review and acceptance by the Owner's Representative. Sample shall include all joints, finishes and tooled conditions for approval. Contractor shall schedule review well in advance of concrete operations to allow for color and/or finish modifications if necessary.
6. Codes and Standards: Comply with the provisions of the following codes, specifications and standards, except where more stringent requirements are shown or specified:
  - a. California Building Code 2016, Title 24, Part 2, Chapter 19A - Concrete
  - c. ACI 301 Specifications for Structural Concrete for Buildings
  - d. ACI 318 Building Code Requirements for Reinforced Concrete
  - e. ACI 614 Recommended Practice for Measuring, Mixing, and Placing Concrete
  - f. Concrete Reinforcing Steel Institute, Manual of Standard Practice
7. Concrete Testing Service: The Owner may retain and engage a testing laboratory to perform material evaluation tests.

#### 1.05 DELIVERY AND STORAGE

- A. Deliver concrete reinforcement to job site properly tagged and ready to set. Store above ground surface on platforms, skids, or other supports. Coordinate delivery and storage of all other materials as appropriate.

## **PART 2 PRODUCTS**

#### 2.01 CONCRETE MATERIALS

- A. Concrete shall be Portland Cement Concrete conforming to Section 90 of the Standard Specifications. Unless otherwise specified, all concrete shall be Class B at a minimum.
- B. Cement shall be Type II cement conforming to ASTM Designation C150 as modified by Section 90 of the Standard Specifications.
- C. Mortar shall conform to Section 51 of the Standard Specifications. Mortar, when used for patching, shall match the color of the work to be patched.
- D. Water used for mixing shall be potable.
- E. Minimum mix requirements: It shall be the contractor's responsibility to design the concrete mixes to provide the minimum requirements listed below. Increase cements content over that listed if necessary to obtain the specified compressive strength. Minimum ultimate compression strength of concrete at 28 days is as follows:

Item	Strength	Max. slump	Size of aggregate	Cement (# of 94 lb. sacks per yard)	W/C Ratio
Slab-On-Grade	3,000	4"	3/4"-1"	5	.60
Walls/Footings	3,000	4"	3/4"-1"	5	.60
Thrust Blocks	2,500	4"	3/4"-1'	4.5	.45

## 2.02 OTHER MATERIALS

- A. Formwork materials shall be surfaced lumber, 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, and as follows:
1. All form panels shall be placed in a neat, symmetrical pattern, subject to the acceptance of the Owner's Representative.
  2. Form clamps or bolts shall be used to fasten forms. The use of ties consisting of twisted wire loops to hold forms in position during the placing of concrete shall not be permitted unless noted otherwise.
  3. All exposed sharp edges shall be bullnosed to prevent mortar runs and to preserve smooth, straight lines, unless otherwise acceptable to the Owner's Representative or noted in the Drawings.
  4. Before concrete is placed in forms, all inside surfaces of forms which will later be removed shall be thoroughly coated with commercial quality form oil, which will permit the ready release of the forms and will not discolor the concrete.
  5. Where form panels are attached directly to the studding or joists, the panels shall be not less than five-eighths of an inch (5/8") thick, and the studding, or joists, shall be spaced not more than twelve inches (12") center to center.
    - a. Form panels less than five-eighths of an inch (5/8") thick, otherwise conforming to the requirements specified, may be used with a continuous backing of surfaced material three-fourths of an inch (3/4") thick.
    - b. Form panels more than five-eighths of an inch (5/8") thick attached to studding or joists spaced at more than twelve inches (12") center to center may be used, provided that the deflection of the panel between studding or joists does not exceed that of a five-eighths inch (5/8") thick panel attached to studding or joists spaced at eighteen inches (18") center to center.
  6. Curved surfaces shall be formed with timber, plywood, masonite, or sheet metal as appropriate. Sheet metal shall have masonite or plywood backing. Plywood for forming shall be ACX or better grade.
- B. Expansion Joints:
1. Joint primer: Sonneborn horizontal paving joint primer No. 733, or No. 766, one component solvent based primer or acceptable equal.
  2. Expansion joint: One-half inch (1/2") asphalt impregnated fiber strips in compliance with ASTM D1751 or acceptable equal. Expansion joint material shall be variety with "zip-strip" H-channel joint sealant receptacles. If proposed joint material is not installed with sealant receptacles then, the expansion joint material shall be completely covered with a Sonneborn "Sonofom" closed cell backer rod or acceptable or equal prior to application of joint sealant. Provide three eighth inch (3/8") tooled edges each side of joint material. Refer to Drawings for additional information.
  3. Expansion joint sealant: Self leveling sonolastic elastomeric polyurethane joint sealant in accordance with Federal Specification TT-S-00227E, Type I, Class A-Sonneborn SL-2, (800) 433-9517, or acceptable equal. Color shall match concrete.

Sonneborn products are available through the Cade Co. San Jose, CA (408) 292-3435.

- C. Score Joints:
  - 1. Score joints: Shall be three eighth inch (3/8") radius tooled joints to a one inch (1") depth.
- D. Reinforcing bars: Comply with Section 52-1.02B of Standard Specifications, Section 1907 of IBC, Title 24, C.C.R. and ASTM A-615A. Grade 60, deformed, except #3 and smaller may be Grade 40. Test in accordance with IBC Section 1704.4, Title 24, C.C.R. Bars shall be in a new, "first-class" condition.
- E. Smooth Dowel Steel Bars for Expansion Joints: ASTM A-29, #3 smooth Grade 40. Provide as indicated on drawings. Where shown, provide metal dowel sleeve at one end of dowel (or other approved break-bond method), to permit lateral movement at dowel within concrete section. Provide for movement with equals joint width plus one-half inch (1/2"). Bars shall be in a new, "first-class" condition.
- F. Tie Wires: Black annealed, ASTM A-82, minimum 16 gauge.
- G. Supports for Reinforcement: Provide supports for reinforcement including bolsters, chairs, spacers and other devices for spacing, support and fastening reinforcing bars and welded wire fabric in place. Use wire bar type supports complying Owner CRSI specifications, unless otherwise acceptable.
- H. Concrete Darkening Agent: Add one quarter pound (1/4 lb.) of Davis Colors Inc. colorant #8084 Black (or acceptable equal) per 94 lb. sack of cement to all exterior concrete which will be exposed to view when cured (Drain rims and concrete receiving other colorants excluded). Contact Davis Colors Inc. for local distribution information Ph.: (800)-800-6856 Fx.: (213)-269-1053. Other colorants shall be as noted in the Drawings.
- I. No admixtures will be allowed without prior acceptance by the Owner's Representative.

### **PART 3 EXECUTION**

#### **3.01 EXCAVATION**

- A. In addition to the general grading excavation required, the contractor shall excavate to the required depths in the locations shown for flatwork, retaining walls, curbs, footings, etc. Excess excavation shall be replaced with concrete poured monolithically with the wall or pavement, at no additional cost to the Owner.

#### **3.02 FORMING**

- A. All forming shall conform to Section 51 of the Standard Specifications and as follows:
  - 1. The Contractor shall build forms with a high degree of care and shall select from materials of adequate strength and smoothness to produce smooth, even surfaces of uniform texture and appearance, free of bulges, depressions, or other imperfections per the discretion of the Owner's Representative. Remove any residue remaining on concrete after forms are removed.
  - 2. Concrete walls are to be vibrated as necessary to provide uniform density. No concrete surfaces with "rock pockets" or "honeycombing" shall be accepted.
  - 3. Transition of curves to straight lines and of curves shall be formed as smooth, continuous, and uninterrupted with typical 90 degree radius alignment at the points of tangency.

### 3.03 CONCRETE CONSTRUCTION

- A. All concrete shall be mixed in accordance with Section 90 of the Standard Specifications.
- B. Construction of concrete substructures shall conform to applicable provisions of Section 51 of the Standard Specifications.
- C. Construction of concrete curbs, gutters, sidewalks, wheelchair ramps, and driveway aprons shall conform to Section 73 of the Standard Specifications.
- D. At the termination of all curbs, the final eighteen inch (18") length of curb shall be tapered from the full curb height to the gutter flow line or adjacent pavement elevation unless noted otherwise on the plans.

### 3.04 CONCRETE JOINTS

- A. Joints shall be constructed at locations indicated and as detailed in the Drawings.
- B. Construct concrete joints as follows:
  - 1. Expansion Joints:
    - a. General. Refer to drawings for location and type expansion joints.
    - b. Install to full depth of slab per drawings and manufacturer's instructions.
    - c. Fiber expansion joints - After allowing concrete to fully cure, remove zip strips and install expansion joint sealant.
  - 2. Score Joints: Refer to drawings for locations.
- C. Curb and edge band joint locations – unless otherwise noted on plans
  - 1. Every five feet for score joints
  - 2. Install fiber expansion joints fifteen feet maximum.
  - 3. Align score and fiber expansion joints with proposed fence posts.
  - 4. Install fiber expansion joints at all corners, beginnings and endings of radii.

### 3.05 EDGING

- A. All edges of slabs, curbs, and other structures shall be tooled with a one-half inch (1/2") radius edging tool, unless otherwise specified in the Drawings.
- B. All trowel marks resulting from tooling of edges shall be carefully troweled out.

### 3.06 REINFORCEMENT

- A. Reinforcement installation shall conform to the provisions of the Standard Specifications as follows:
  - 1. Cleaning - Section 52-1.03B
  - 2. Bending - Section 52-1.03C
  - 3. Placing - Section 52-1.03D
  - 4. Splicing - Section 52-6
  - 5. Lapped Splices - Section 52-6.03B

### 3.07 CONCRETE PLACEMENT

- A. Concrete placement shall conform to Section 40-103H of the Standard Specifications.
- B. Concrete shall not be dropped freely where reinforcing bars will cause segregation, nor shall it be dropped freely more than six feet. Spouts, elephant trunks, or other acceptable means shall be used to prevent segregation.

### 3.08 SURFACE DRAINAGE

- A. Finish surfaces shall drain properly with no areas of standing water. Tops of curbs, walls and foundations shall be level unless otherwise specified.

### 3.09 CURING

- A. All newly placed concrete shall be cured in accordance with the provisions in Section 90 of the Standard Specifications.

### 3.10 PROTECTION

- A. All newly placed concrete shall be protected in accordance with the provision in Section 40-1.03P of the Standard Specifications.
- B. Provide all necessary security to protect the concrete from vandalism. Any concrete which is defaced or damaged during the course of this contract shall be replaced by the Contractor at no additional cost to the Owner.

### 3.11 CONCRETE FINISHES

- A. Patching of concrete to repair or disguise flaws, imperfections or other damage, shall commence only with the acceptance of the Owner's Representative. Patching color and finish shall conform to the original adjacent concrete color and finish and the Owner's Representative shall be the sole judge in this respect. Any patching of concrete walls must occur prior to final wall finishing.
- B. Provide concrete finishes where shown in the Drawings and as follows:
  - 1. Trowel Finish: Trowel finish shall be smooth and clean with no obvious trowel marks.
  - 2. Broom Finish: Broom with medium bristled broom to a uniformly roughened surface. Finished surface shall be clean with uniform and straight lines.
  - 3. Provide samples, as previously specified, of all concrete finishes for review and acceptance prior to pouring concrete. All accepted samples shall be left on Job site as quality control examples until removal and disposal of samples is acceptable to the Owner's Representative.
  - 4. Paving with a slope greater than 6% shall be heavy broom finish and paving less than 6% shall be a medium broom finish.

### 3.12 BUILT-INS

- A. Refer to drawings for additional information relating to built-ins that shall be coordinated with concrete work (e.g., light fixtures, benches, handrails, guardrails, site furnishings, signs, etc).

### 3.13 CLEANING

- A. Remove excess base material, concrete spills, cement stains and all other excess materials from all project areas prior to Final Acceptance.

### 3.14 TOLERANCES

- A. Concrete
  - 1. Vertical deviation from specified grades shall not exceed 0.04 foot, except where tolerances are tighter in another specification section, at which point those tolerances will govern.
  - 2. Surface smoothness deviations shall not exceed 1/8 inch in 8 feet, in any direction.
  - 3. Thickness shall not be more than 0.01 foot less than planned thickness at any point.

END OF SECTION

SECTION 32 18 00

**MISCELLANEOUS SAND SURFACING**

**PART 1 GENERAL**

1.01 SUMMARY

- A. Furnish all labor, materials, equipment, facilities, transportation, and services to install and complete all miscellaneous paving and surfacing and related work as shown on the Drawings and/ or specified herein.
- B. Scope of work:  
The general extent of the miscellaneous paving surfacing is shown on the Drawings and may include, but is not limited to:
  - 1. Volleyball Beach Sand
  - 2. Sand pits at track events
- C. Related sections can include, but may not be limited to:
  - 1. Section 12 93 00 - Site Furnishings
  - 2. Section 31 20 00 - Earthwork
  - 3. Section 32 11 00 - Base Courses

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. State of California Department of Transportation Standard Specifications, Current Edition

1.03 SUBMITTALS

- A. Conform to Section 01 33 00 and applicable Division One and/or Division Two specifications, General Conditions and Special Provisions.
- B. Submit two (2) (unless noted otherwise) one quart samples of the following:
  - 1. Beach Volleyball Sand

1.04 QUALITY ASSURANCE

- A. Materials Source: Sources of materials specified herein shall not be changed during course of work without review and written acceptance by the Owner's Representative.

1.05 SEQUENCING AND SCHEDULING

- A. Coordinate all applicable subgrade preparations, installations of base course materials and all other work with work of this section to insure a proper, timely installation.

**PART 2 PRODUCTS**

2.01 MATERIALS

- A. Beach Volleyball Sand "Marina Sand". Available through:
  - a. Cemex - Adam Lind 916 759 9536; adam.lind@cemex.com
- B. Sand for long / triple jump pits shall be washed sand and #1 plaster sand. Available through: TMT Enterprises Inc. San Jose, CA. Ph: (408) 432-9040, Fx: (408) 432-9429 attn: Matt Moore. Generally, the material shall meet the following gradation and materials properties:

Sieve Size	ASTM 144-91 Spec	% Passing
#4	100	100
#8	95-100	98
#16	70-100	91
#30	40-75	71
#50	10-35	21
#100	2-15	4
#200		0.9

**PART 3**

**EXECUTION**

3.01 SAND

- A. Spread sand to depth specified on Drawings.
- B. Rake then roll sand with water roller to establish firm, even surface at specified elevation.

3.02 TOLERANCES

- A. Vertical deviation from specified lines, grades, and detail cross sections shall not exceed 0.02 foot for all surfacing specified in this section.

END OF SECTION

SECTION 32 18 14

**SYNTHETIC TURF BASE**

PART 1 GENERAL

1.01 SUMMARY

- A. Furnish all labor, materials, equipment, facilities, transportation and services to complete all base improvements and related work as shown on the Drawings and/or specified herein.
- B. Scope of work: The general extent of the synthetic turf base is shown on the Drawings and generally includes, but is necessarily limited to, the following:
  - 1. A vertical draining, porous rock aggregate base consisting of a uniform single rock material.
  - 2. A manufactured porous drainage composite. (Owner installed)
  - 3. A manufactured porous shock pad. (Owner installed)
- C. Related sections can include, but may not be limited to:
  - 1. Section 31 20 00 - Earthwork
  - 2. Section 31 23 00 - Excavation, Backfilling and Compaction
  - 3. Section 32 13 13 - Portland Cement Concrete
  - 4. Section 32 18 13 – Synthetic Turf Playing Field
  - 5. Section 33 40 00 – Storm Drainage

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. California Building Code (CBC):
  - 1. Chapter 33 – Site Work, Demolition, and Construction.
- B. American Society for Testing and Materials (ASTM):
  - 1. D 1557-07 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort
  - 2. ASTM D2434 - 68(2006) Standard Test Method for Permeability of Granular Soils (Constant Head)
  - 3. ASTM C88 - 05 Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
- C. California Occupational Safety and Health Standards (OSHA):
  - 1. Article 6 - Excavations and Shoring.
- D. State of California Department of Transportation Standard Specifications, Current Edition

1.03 SUBMITTALS

- A. Conform to requirements of applicable Division One and Division Two specifications, General Conditions and Special Provisions.
  - 1. Submit product data on pipe accessories, filter fabric, and porous drainage composite as applicable.
  - 2. Submit manufacturer's installation instructions.
  - 3. Certification: Submit certification signed by Contractor and drainage system installer that installed materials conform to specified requirements and system was successfully checked and tested prior to covering with drainage sand or gravel aggregate.
  - 4. Submit two one quart samples of each rock material to the Architect, and one five gallon sample of each rock material to the Owner's testing agent.
- B. Project Record Drawings:



1. Conform to applicable Division One and Division Two specifications, General Conditions and Special Provisions.
2. Accurately record locations of utilities remaining, re-routed utilities, new utilities, and newly discovered utilities by horizontal dimensions, elevations, inverts, and slope gradients.

#### 1.04 QUALITY ASSURANCE

- A. Control of Work: Conform to Section 5 of the Standard Specifications.
- B. Control of Materials: Conform to Section 6 of the Standard Specifications.

#### 1.05 PROTECTION OF PROJECT SITE

- A. Make provisions for, and take the necessary precautions to protect existing and new work from damage during entire life of project.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store all products to be installed as part of the field base neatly and orderly, stacked and blocked to prevent damage. Cracked, warped, uneven, or otherwise damaged material shall be removed from the site.

#### 1.07 PROJECT CONDITIONS

- A. Contractor shall be responsible for stabilizing all top of subgrade elevations for the synthetic turf areas prior to receiving the rock aggregate base and for executing any fine grading as may be necessary or incidental to placement of the synthetic turf.
- B. The rock base shall not be contaminated with other soil. Contaminated rock material will be rejected. In addition, if at any time the rock material is tested at the site and is not in compliance with the specifications, Contractor shall remove all material not in compliance with the project specifications at its sole expense and replace it with material that conforms to the Contract Documents.
- C. Contractor to prevent surface water and subsurface or groundwater from flowing into excavations and flooding project site and surrounding area. Contractor must not allow water to accumulate in excavations. Contractor shall remove water to prevent softening of sub grades.

#### 1.08 MATERIAL TESTING

- A. Testing of proposed base rock will be performed in the following steps:
  1. For Porous Rock Bases:
    - a. *Pre-construction Testing:* Contractor shall submit a five-gallon separate composite (the Owner's Testing Agent may elect to pull the sample directly at the quarry, and may also want the test samples or varying quantity based on the testing labs' needs) of each porous base rock material. The Owner's testing agent will evaluate these materials using ASTM C136 and ASTM D75 testing protocol as a guideline. This representative sample will be used for comparison with all subsequent samples submitted for acceptance during construction.
    - b. *Testing During Construction:* The Owner's Testing Agent shall obtain a five-gallon composite sample (project geotechnical engineer may elect to pull the sample directly at the quarry, and may also want the test samples or varying quantity based on the testing labs' needs) of all base rock materials at the rock source representing each 500 tons per site of base rock and each 250 tons per site of top rock for comparison with the accepted material (if a single rock is used, it will be tested each 500 tons). Material shall not be delivered to the project site until tests show it complies with the accepted material.

- B. Payment for initial material testing is the responsibility of the Owner. Any test, which must be repeated on materials that have failed to meet specifications or are as a result of shortages, will be borne by the Contractor.
- C. The testing reports shall be submitted to the Owner for approval ten (10) calendar days prior to scheduled placement on the synthetic turf subgrade.
- D. The Contractor shall include the following items:
  1. Identification of proposed source and supplier.
  2. Current lab mechanical analysis of the proposed rock using ASTM standards for sieve analysis.
  3. Sample sizes as determined by the Owner.
  4. Certification that the supplier can deliver the total quantity of material needed to complete the project in a timely manner.
- E. All crushed rock must come from one supplier only. During construction, samples may be taken in the field and analyzed periodically by the Contractor or Owner to assure strict compliance with the specifications. The rock shall be sampled at the source. Material delivered to the site not meeting specifications shall be rejected by the Owner. All material rejected by the Owner shall be removed from the site at the Contractor's expense.
- F. The following tests shall be performed by the Owner's Testing Agent prior to acceptance of either any rock identified in this specification section. All submitted rock for a porous rock base is required to pass the following qualifications:

**Restrictions:**

To ensure structural stability:  $D_{60}/D_{10} > 5$  and  $1 < \frac{D_{20}^2}{D_{10} * D_{60}} < 3$   
 Fragmentation must be 100%.

D"x" is the size of the sieve (in millimeters) that lets pass "x" percent of the rock. For example, D<sub>60</sub> is the size of the sieve that lets 60% of the rock pass. For calculation purposes, these sizes may be obtained by interpolation on a semi-log graph of the sieve analysis.

To ensure proper drainage: Porosity of both rocks > 25% (when rock is saturated and compacted to 92% Modified Proctor)  
 Permeability of rock base > 30 in/hr (Tested thru ASTM D2434 with rock saturated and compacted to 92% Modified Proctor)

Depending on the type of rock present in the crushed rock mix, other mechanical characteristics might be necessary for approval.

- G. Rock shall also comply with the following material requirements:
  1. Soft rock materials (i.e. sandrock, limerock and shale materials) are not suitable. Rock supplier shall certify that all supplied rock will be void of this type of rock. The rock should meet the following stability requirements:

Test Method	Criteria
LA Abrasion (Calif. Test 211)	Not to exceed 35
Durability Index (Calif. Test 229)	Not less than 40
Sulfate Soundness (ASTM C-88)	Not to exceed 12% loss for coarse aggregate, 10% for fine aggregate (based on a sulfate solution)

- H. In addition, if rock stability to water and vehicles is in question, the Owner has the option to perform additional testing to ensure material shall adhere to requirements of Caltrans Section 68.
- I. All crushed rock shall come from one supplier only. During construction, samples will be taken and analyzed periodically by the Owner to assure strict compliance with the specifications. The Owner may sample and test the rock material either at the source or at the project site upon delivery from incoming transfer trucks. Material delivered to the site not meeting specifications will be rejected by the Owner. All materials rejected by the Owner shall be removed from the site at the Contractor's expense. It is the Contractor's responsibility to ensure that all permeable rock for the synthetic turf base meet the above requirements throughout the installation process, including transfer and delivery to the site, placement, spreading, compaction, and installation of synthetic turf material. Proper investigation into rock sources may be required by the Contractor to ensure that the rock that was bid will meet the project specifications.
- J. Prior to trucking of material to project sites, **all crushed rock shall be washed so it is clean of any impurities and/or fines created during rock crushing operations.**

1.09 PROJECT RECORD DOCUMENTS

- A. Accurately record location of pipe runs, connections, cleanouts and invert elevations.

1.10 OWNER'S TESTING AGENT

- A. To be determined.
- B. The Owner reserves the right to change testing laboratories if the need arises.

1.11 WARRANTY

- A. All engineering base materials and workmanship shall be guaranteed for a period of one year beginning at Notice of Substantial Completion.

**PART 2 MATERIALS**

2.01 ENGINEERED PERMEABLE ROCK BASE

- A. The synthetic turf permeable rock base shall consist of a single uniform rock material, as described below.
- B. For the section of permeable rock outside the subdrain trench within the field areas, the Contractor shall use the following rock type:
  - 1. One uniform permeable rock base material beneath the synthetic turf that shall be a virgin (i.e. un-recycled) crushed rock. It must meet the gradation criteria for the California Department of Transportation 3/4" Permeable Class II (Section 68):

<b>Mesh size</b>	<b>% Passing</b>
1"	100
3/4"	90-100
3/8"	40-100
#4	25-40
#8	18-33
#30	5-15
#50	0-7
#200	0-3

The above rock shall be virgin (i.e. un-recycled rock). The above rock gradation ranges are general recipes for the Contractor to use in order to meet the product performance requirements of the built rock base. The Contractor is responsible for ensuring whatever type of rock and blend they submit and install will meet all the stated requirements in item 1.08 in this section.

2.02 SUBDRAIN TRENCH DRAIN ROCK

- A. Shall be ¾” x ½” crushed virgin (i.e. un-recycled) rock, and shall meet the following general gradation requirements:

Sieve Size	%PASSING
1”	100
¾”	90-100
½”	10-40
⅜”	0-15
#4	0-5

- B. The rock profile will extend from the bottom of the trench to the top of both sides of the subdrain trench, and to the top of rock elevation. **The permeable base rock shall not be installed over the subdrain trench drain rock.** For planarity purposes, a clean uniform ⅜” minus crushed rock material may be installed over the subdrain trench profile (max thickness one inch for this rock layer)

2.03 MANUFACTURED POROUS CLOSED CELL COMPOSITE BASE AND SHOCK PAD MATERIAL (or Alternate Product) (Owner installed)

- A. Shall be Brock PowerBaseYSR - 1.0 inch thickness (no known equal). Contact is Brock USA Northern California Sales Manager, David Brown phone no. (530) 575-8976. (For Futsal Field)
- B. Shock Pad: Shall be Brock SP14 – approximately 14 mm uniform thickness (no known equal). Contact is Brock USA Northern California Sales Manager, David Brown phone no. (530) 575-8976. (For Soccer and P.E. areas, baseball field is not part of this contract)

2.04 GEOTEXTILE FILTER FABRIC:

- A. Provide geotextile filter fabric in the areas designated on the Drawings. Geotextile filter fabric conform to the following minimum specifications:

Property	Test Method	Typical Values
Grab Strength	ASTM D 4632	80 lb.
Puncture Strength	ASTM D 4833	25 lb.
Burst Strength	ASTM D 3786	130 lb.
Trapezoid Tear	ASTM D 4533	25 lb.
Permeability	ASTM D 4491	0.1 cm/sec
Apparent Opening Size	ASTM D 4751	#50 Sieve size
Permittivity	ASTM D 4491	

- B. Geotextile Filter Fabric Mirafi RS280i or approved equal.

2.05 SYNTHETIC TURF EDGE CONNECTIONS

- A. Synthetic turf edge connections made directly to concrete shall be done with Nordot 34N glue. It is manufactured by Synthetic Industries, Inc. Refer to details for additional information.

- B. Synthetic turf edge connections may also be done with header boards and expanding nailing connections between the header and concrete edge band. Refer to details for additional information.

## 2.07 DRAINAGE ELEMENTS

- A. Refer to Storm Drainage Specification Section for all in-field drainage elements.

## PART 3 EXECUTION

### 3.01 SUBGRADE PREPARATION

- A. Contractor shall verify that subgrade has been prepared according to specification section 31 20 00 with regard to compaction, grade tolerances and is free of debris, non-compactable material, topsoil, or organics prior to beginning work.
- B. Top of subgrade elevations shall be verified using laser-operation survey instruments. Refer to Conformance Surveying specifications for requirements.
- C. Once the subgrade conformance has been accepted and compaction has been properly achieved, the geotextile filter fabric shall be installed over the compacted and prepared subgrade, as shown on the plans, without disturbing grades.
- D. Geotextile fabric shall be installed with 6" overlap and stapled 6' on-center along seams. Staples to be 6" staples.

### 3.02 INSTALLATION OF THE SUBDRAIN TRENCH AND IN-FIELD DRAINAGE (as applicable)

- A. Contractor to install drain rock and piping in strict compliance with the manufacturer's written instructions and as indicated in the Drawings. Contractor to exercise caution and the appropriate sequencing of work, so as not to damage any drainage piping during the base rock installation.
- B. Contractor to protect all drain trenches to ensure that pipe is not damaged in any way by construction operations and that the rock is not contaminated with any native soils, unintended construction material, or deleterious materials during subsequent construction operations.

### 3.03 PLACING THE POROUS ROCK BASE

- A. The crushed rock must be laid without damaging the soil subgrade (and the in-field drainage system as applicable). It is very important to not create any depressions with heavy equipment. The specified rock or aggregate supplied must conform to the recommended specifications. **The finished crushed rock or aggregate base supplied must be stable, unyielding, and permeable.**
- B. The crushed rock shall be carefully and evenly spread over the subgrade and up both sides of the subdrain trenches to the depth shown on the plans.
- C. Excess water shall not be applied during installation of rock base and rough grading due to the potential of softening the subgrade and altering the grading.
- D. Crushed rock shall be smoothed and compacted uniformly to design grades by alternating raking, water settling, and rolling operations. **Contractor shall be advised not to overwork the rock material, thus modifying its gradation characteristics. Minimal rolling is advisable to achieve design grades and compaction. Only static (absolutely no vibratory rolling of the permeable rock is allowed) rolling is allowed, and max 3-5 ton rollers should be used on the permeable rock base.**
- E. If the required compacted depth of the base course exceeds 6", the base rock course shall be constructed in 2 or more layers or lifts of approximate equal thickness. Each layer must achieve a

uniform 90% relative compaction. No compaction of greater than 93% relative compaction should be achieved.

- F. Top of porous rock elevations shall be verified using laser-operation survey instruments. Refer to Conformance Surveying specifications for requirements.
- G. The final grade shall be ideally compacted to a uniform 90 - 92% relative compaction. **Contractor shall be advised not to overwork the rock material, thus modifying its gradation characteristics. Minimal moving of the rock upon placement of the material on the subgrade and rolling is advisable to achieve design grades and compaction. Compaction shall not be above 93%.**
- H. Top of rock elevations shall be verified using laser-operation survey instruments. Refer to Conformance Surveying specifications for requirements.
- I. Contractor shall manually screed the top rock surface to ensure tolerances are met. Finish surface planarity shall be verified, and if necessary adjusted, by the Contractor using string line method. A mason's line held taught between two workman separated by a distance of approximately 40 feet, shall be placed directly on the finished surface, parallel to the direction of greatest slope. A third workman shall check for separations between the mason's line and the finished surface that are equal to or greater than the specified tolerances. Areas of separation shall be outlined with marking paint and the depth of separation indicated.
- J. Entire finished surface shall be "walked" with mason's line in increments of approximately 3 feet.
- K. Areas outlined with marking paint shall be filled with top rock to the depth indicated and raked by hand. Filled areas shall be compacted to provide a non-yielding, smooth, flat surface.
- L. Final finished surface planarity shall be approved by the Owner and the Synthetic Turf Installer.
- M. Once the top of the permeable rock base is installed and compacted, the Contractor shall notify the Owner Testing Agent that it is ready for the field permeability test. The Agent shall be given two working days notice and have 2 days to complete the in field test, which will consist of a minimum of four controlled field permeability tests per synthetic turf field. Tests shall be by a single ring infiltrometer or equivalent test method. If the test does not achieve a minimum of 20 inches per hour, the Contractor shall provide within 48 hours a written repair procedure to correct the permeability deficiency. All repair work, including any associated delays, shall be the Contractor's sole responsibility. Any fine tuning of the field base due to the testing operations is the responsibility of the Contractor.

#### 3.04 MANUFACTURED POROUS CLOSED CELL COMPOSITE BASE AND SHOCK PAD MATERIAL (Owner installed)

- A. Upon successful completion of installing the base, the porous drainage composite or shock pad shall be installed per the Contract Drawings and in strict compliance with the manufacturer installation instructions. Contractor to exercise extreme care in order to avoid disturbing the crushed rock base.
- B. Contractor to take measures to ensure that the product is not exposed to the outdoor elements longer than the manufacturer's recommendations. Any product that exceeds this time duration shall be removed from the project site immediately and not used on the project.
- C. All sections of the material shall be interlocked and/or connected to adjacent pieces of the drainage material in strict conformance with the manufacturer's written recommendations.

END OF SECTION

SECTION 32 18 24

**POLYURETHANE TRACK SURFACING**

**PART 1 GENERAL**

1.01 SUMMARY

- A. Furnish all labor, materials, equipment, facilities, transportation, and services to install and complete all miscellaneous paving and surfacing and related work as shown on the Drawings and/ or specified herein.
- B. Scope of work:  
The general extent of the miscellaneous paving surfacing is shown on the Drawings and may include, but is not limited to:
  - 1. "All weather" polyurethane bound track surface.
- C. Related sections can include, but may not be limited to:
  - 1. Section 31 20 00 - Earthwork
  - 2. Section 32 11 00 - Base Courses
  - 3. Section 32 12 16 – Asphalt Paving
  - 4. Section 32 13 13 – Portland Cement Concrete

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. State of California Department of Transportation Standard Specifications, Current Edition.
- B. The work hereunder shall be done and conform to the standards for track construction as described in the following track design and construction guidelines:
  - 2. NCAA Track and Field Facility Guidelines.
  - 3. The American Sports Builders Association *Track Construction Manual*.

1.03 SUBMITTALS

- A. Conform to applicable Division One and/or Division Two specifications, General Conditions and Special Provisions.
- B. Submit cut-sheets on all products to be used in conformance with Division One Sections, including all products' Material Safety Data Sheets (MSDS). Provide ISO9001 and ISO14001 from the manufacturing facility where the synthetic surface is manufactured.
- C. Submit printed specifications of the synthetic surfacing system that is being installed. Including a required five- (5) year manufacturer's warranty against workmanship, installation and materials on the synthetic surface.
- D. Submit four (4) minimum size one quarter square foot (1/4 sq. ft.) sample of the following:
  - 1. Synthetic track surfacing product as specified (including specified color)
- E. Submit an affidavit attesting that the surfacing material to be installed meets the requirements defined in the manufacturers currently published specifications and any modifications outlined in these technical specifications prior to the commencement of any work.
- F. A letter signed by an authorized representative surfacing installer that the track and field surfacing has no measurable traces of heavy metals, leachable mercury, and any other hazardous materials identified by the EPA.

- G. Upon completion of all line Markings, the SSC shall submit to the Owner a certification of accuracy submitted by a Registered Engineer or Surveyor. This document shall state that the track markings and layout meets the NCAA Track and Field Facility Guidelines and the requirements of these bid documents.

#### 1.04 QUALITY ASSURANCE

- A. The track surface will be applied by a licensed firm, which has successfully installed at least fifteen polyurethane-surfaced tracks as specified in these specifications during the past three (3) years. The contractor shall have a current California Contractor's license and bond number.
- B. Track surfacing contractor will be required to provide references for a minimum of five (5) similar, successfully executed projects, including current appropriate Owner contact name and phone number. Successful contractor will provide proof of insurance as well as performance and payment bonds.
- C. Installing foreman must have at least five years experience installing this type of track system.
- D. All machinery and materials used must be only those approved by the Owner and the approved manufacturer of the selected synthetic surfacing material.

#### 1.05 SEQUENCING AND SCHEDULING

- A. Coordinate all applicable subgrade preparations, installations of base course materials and all other work with work of this section to insure a proper, timely installation.

#### 1.06 SITE CONDITIONS

- A. Weather: Surfacing shall not be done when the threat of freezing exists for the following 24 hours, track substrate has visible moisture, rain is imminent or gusting winds are occurring. Do not apply rubberized topping when product material or base surface temperature is less than 50 degrees F.
- B. Site: While surfacing and striping are being done, sprinkler systems must be curtailed, shut off, or controlled so that no water falls on the track or event area surfaces. Other trades and Owner personnel must stay off the wet or curing surfaces.
- C. Provide temporary barriers as required to prevent public entry to construction area and to protect adjacent properties from damage during construction operation. Security is responsibility of the Contractor. Damage that occurs after or before normal work hours is the responsibility of the contractor.

#### 1.07 WARRANTY

- A. Provide manufacturer's standard 8 year warranty from the project's Date of Acceptance.
- B. The warranty is to be provided directly by the track-surfacing contractor to the Owner. It is to include the standard company warranty.
- C. All material shall be guaranteed to the extent that the surfacing:
  - 1. Has been manufactured and applied in accordance with these and the manufacturer's specifications.
  - 2. Will hold fast and/or adhere to the asphalt, concrete, edging, filler and patches or overlay materials.
  - 3. Will perform as specified in these specifications and the specifications of the product manufacturer in the current standard product information literature and specification sheets.
  - 4. Is Ultra-Violet resistant and will not de-laminate, bubble, blister, fade, crack or wear excessively during the guarantee period.



## PART 2 PRODUCTS

### 2.01 APPROVED PRODUCTS AND MANUFACTURERS / INSTALLERS (Full Pour Polyurethane Running Track Surface):

- A. Product: BSS 1000.  
Available through: Beynon  
4668 N. Sonora Ave., Ste 101, Fresno, CA 93722  
Phone: (559) 237-2590  
Contact Name: Jeff Dickey / Mark Duyst

All products shall adhere to the minimum material requirements provided in this specification. *Alternate product brand names that meet or exceed the properties and components of the specified product shall be submitted by the Contractor, and will be reviewed by the Owner. It is the responsibility of the Contractor to prove the product meets or exceeds the quality of the product specified, and the Owner may accept the product if such proof is provided and supported by applicable literature.*

- C. The polyurethane product must meet the following minimum recommendations: The minimum depth shall be 13 mm. The polyurethanes must be ISO 9001 Certified. No black rubber is allowed in the wear course. Color shall be red. The polyol:isocyanate mix ratio shall be no greater than 3:1 (i.e. 8:1 mix ratio products are not acceptable). Computer electronic proportioning machines must be used when mixing components.

### 2.02 MATERIALS (Impermeable Polyurethane Running Track Surface):

- A. Running Track Surface: Full depth poured-in-place two component, UV stabilized elastomeric polyurethane dual durometer synthetic surfacing system with embedded textured finish.
- B. Materials include:
1. SBR Rubber- 1-3 mm or 1-4mm as specified.
  2. Single Component Polyurethane Primer
  3. Two Component VPU Polyurethane
  4. EPDM Rubber 1-3mm (Melos or approved equal)
- C. Product is an impermeable polyurethane full pour track surface with an embedded EPDM granular finish. Finished thickness of the surface shall be an average of 15mm, and possess the following performance characteristics per IAAF Test Standards:
1. Thickness is 13mm minimum
  2. Force Reduction: 35-50%
  3. Vertical Deformation: 0.6mm-2.5mm
  4. Coefficient of Friction:  $\geq 0.5$  (47 TRRL Scale)
  5. Tensile Strength:  $\geq 0.5$  Mpa
  6. Elongation:  $\geq 40\%$
- D. Rubber (SBR): The rubber in the bottom and middle layers shall be specifically graded fine mesh Styrene Butadiene Rubber (SBR). Final gradation of SBR shall not exceed #20 mesh in size. SBR is to be dried to less than 2.5% moisture and sealed in bags. A maximum of twenty percent (20%) by weight of the SBR will be allowed in the force reduction layer.

- E. Colored Rubber (EPDM) Granules: The wearing course of rubber shall be synthetic colored EPDM, the same color as the liquid polyurethane VPU. Final gradation is to be 1-3mm. Specific gravity is to be 1.53±. 02.

COLORED RUBBER	
Basic Material EPDM	20%
Hardness	Shore A 64±1
S.G.	1.53±.02

Black rubber is NOT allowed in the wearing course. Color: Red

- F. Elastomeric Polyurethane: Shall be a two component UV stabilized polyurethane compounded from polyols and isocyanate based on 100% Methylene Diphenyl Isocyanate (MDI) with no solvents or fillers added. The polyurethane shall be red in color. The specified product is Beypur, or approved equal. **NO PRODUCT SHALL BE CONSIDERED AND EQUAL IF THE POLYOL TO ISOCYANATE MIX RATIO EXCEEDS 3 TO 1. NO 8 TO 1 or Toluene Diisocyanate Isocyanate (TDI)-based PRODUCTS ARE ALLOWED.**
- G. Wearing course Layer: Colored EPDM rubber is to be bound by the same two-component polyurethane as the full pour layer. Color to be red unless otherwise specified.
- H. Track Striping: All lines, event markings, and misc. markings shall be sprayed using a specially formulated Single-component, moisture cured, aliphatic polyurethane paint, that is approved by the track surface manufacturer.

**PART 3 EXECUTION**

**3.01 EXAMINATION & APPLICATION PROCEDURES**

- A. Prior to the start of installation, verify asphalt concrete paving for dimensional accuracy, strength, surface preparation and planarity. Notify Owner of any deficiencies.
- B. Entire surface shall be clean and free of all dirt, oil, grease or any other foreign matter. It is the responsibility of the surfacing Contractor to thoroughly wash and/or pressure wash all area of the new /and existing asphalt base to ensure adhesion of the track surface.
- A. Contractor shall to water flood the track asphalt substrate with the use of a water truck. If after 30 minutes on a 70 degree F day, "bird baths" are evident in a depth more than 1/8", Contractor shall submit in writing within two working days to the Owner's representative the appropriate method of correction.
- B. Minimum curing time for base prior to beginning of surfacing is 14 days for new asphalt paving (no fog or slurry seals are allowed) and 28 days for new concrete (No concrete curing compounds are allowed).
- C. Beginning installation stipulates track installer "accepts" existing conditions. Adhesion to the existing asphalt is the Contractor's responsibility.
- D. Keep all personnel, other than employees of track installer, 300 feet from equipment and workers.
- E. The dual durometer synthetic track surfacing system components shall be processed and installed by specially designed machinery with automatic electronic portioning, which provides continuous mixing, feeding and finishing for accurate quality controlled installation. No hand mixing will be allowed.

- F. Force Reduction Layer: The fine mesh SBR granules and UV stabilized elastomeric polyurethane shall be metered and mixed together on site to regulate the ratio/quantity of SBR, not to exceed fourteen percent in the system and to insure an even distribution of the granules throughout the 8mm force reduction layer. No multi-layered system allowed.
- G. Resilient Wearing Layer: The 1 to 3 millimeter EPDM granules shall be mechanically integrated with a UV stabilized elastomeric polyurethane to the full depth of the 5mm wearing layer. The resilient textured finish shall be a dense matrix of embedded EPDM granules.

### 3.02 STRIPING

- A. The Contractor shall consult with the Owner and Engineer prior to the start of his calculations for determination of the finish line, events to be run, location of lane numbers and additional paint markings.
- B. A scaled drawing shall be provided to the Owner prior to construction as a submittal for approval. In addition, the approved scaled drawing shall be provided to the Owner as part of the closeout documents.
- D. Calculations shall be made to the nearest 1/100th of a foot.
- E. Angles shall be set by using a transit or theodolite capable of reading direct to 20 seconds.
- F. Measurement shall be made with a steel tape in engineering scale.
- G. Markings shall be clearly identified and color-coded. All event markings shall be laid out in accordance with current NCAA and NFHS rules.
- H. Upon completion of the installation, the owner shall be supplied with all necessary computations and drawings as well as a letter of certification attesting to the accuracy of the markings.

### 3.03 TRACK TOLERANCES AND CONFORMANCE SURVEYING REQUIREMENTS

- A. Refer to Specification Section 01 70 00 for grade conformance requirements.

### 3.04 FINAL CLEANUP

- A. Contractor shall be responsible for removing all discarded product containers, unused and excess material.
- B. Paint over spray to adjacent surfaces outside the track dimensions shall be removed by the Contractor. All existing surfacing shall be returned to an as-was or better condition once the project site is vacated and prior to the Notice of Acceptance.

END OF SECTION

SECTION 32 18 30

**TENNIS COURT SURFACING**

**PART 1 GENERAL**

1.01 SUMMARY

A. Furnish all labor, materials, equipment, facilities, transportation and services to complete all tennis court paving and related work shown on the Drawings and/or specified herein.

B. Scope of Work:

The general extent of the tennis court paving work is shown on the Drawings and includes, but is not necessarily limited to furnishing all labor, materials, equipment, appliances, transportation, for patching and resurfacing of tennis courts.

The tennis court resurfacing shall consist of filling all low points within tennis courts surface, a refinement course, colored acrylic surfacing and line striping.

C. Related sections can include, but may not be limited to the following:

1. Section 32 12 16 – Asphalt Concrete Paving
2. Section 12 93 00 - Site Furnishings

1.02 QUALIFICATIONS

A. The surfacing subcontractor bidding on this work shall be experienced in the construction of tennis courts and shall, upon request, furnish a list of at least thirty (30) previous installations each consisting of not less than two (2) courts, that have been in use in excess of three (3) years.

1.03 SCHEDULING WORK

A. The work of tennis court construction shall be carried out in such order and with timeliness that the applications of resurfacing shall be completed in ample time to accomplish drying period and application of color seal within the contract time of this project.

1.04 ACCEPTANCE OF SUBSURFACE

A. Prior to beginning the work of tennis court surfacing, the contractor shall verify the elevations, grades and condition of the asphalt concrete subsurface and shall declare if the surface is acceptable, in writing, to the Owner's Representative.

1.05 WEATHER LIMITATIONS

A. No parts of the construction involving asphalt paving shall be conducted during rainfall (or when rainfall is imminent) and unless the air temperature is at least 55 degrees F. and rising.

1.06 COOPERATION

- A. Close cooperation is required between contractors involved in constructing the work. The General Contractor shall be responsible for coordinating all subcontractors and sequencing the work as necessary.

#### 1.07 SUBMITTALS

- A. Submit product information, including product MSDS data, cut-sheets, and samples of the following materials:
  - 1. Binder
  - 2. Patching Mix and Crack Filler
  - 3. Crack Repair System
  - 4. Refinement Course
  - 5. Surface Colors
  - 6. Surface Sealers
  - 7. Line Paint

#### 1.08 WARRANTIES

- A. Contractor's Labor and Material Guarantee: Correct defective Work at no cost to the Owner. Warranty period is to be one year from the date of Final Completion in accordance with Document 00 65 36 - Warranty Form Contractor's Guarantee.
- B. Product Manufacturer's Warranty: Warranty all work under this section in a written document endorsed by the Manufacturer as noted below:
  - 1. Court Surfacing

### **PART 2 PRODUCTS**

#### 2.01 MATERIALS (as applicable)

- A. Binder: Asphalt emulsion conforming to Federal Specification SS-A-674c and/or ASTM D977.
- B. Acrylic Patching Mix - for use in patching cracks (for linear cracks smaller than 1/16" width), holes, depressions and other surface imperfections: Shall be California Court Patch Binder or approved equivalent product. Available thru DecoTurf, Ph: 1-800-332-6178.
  - 1. Court Patch Binder – 100% acrylic resin blended with Portland Cement and silica sand.
    - a) Percent solids by weight (minimum) 46%
    - b) Weight 8.7-8.9 lbs./gallon
- C. Acrylic Crack Filler - for use in filling fine cracks (for linear cracks smaller than 1/2" width), as necessary: Shall be California Crack Filler or approved equivalent product. Available thru DecoTurf, Ph: 1-800-332-6178.
  - 1. California Crack Filler – 100% acrylic resin heavily filled with sand.
    - a) Percent solids by weight (minimum) 85%
    - b) Percent solids by weight (minimum) 15 lbs./gallon
- D. Refinement Course Materials: "Deco Crack Filler 64061" by Calif. Products Corp, "Laykold Resurfacer" by Hawker Manufacturing, Inc, "A.C. Fillercoat" by Asphalt Products Oil Corp., "Surfix TT650" by Cosmicoat, Inc., "301 Western Filler Coat Binder" by Western Colloid

Products, Inc. or acceptable equal.

- E. Surface Colors: Refer to plans
- F. Surface Sealer with Color and Filler: "920-27 Deco-Color MP" by California Products Co., Hawker Colorcoat Concentrate by Hawker Manufacturing, Inc., Laykold Color Coat Concentrate by Advanced Polymer Technology, or acceptable equal.
- G. Line Paint: Shall be Koch Decocolor # 920-03 white paint as available from California Products, or acceptable equal.
- H. Water: The water for all mixes shall be fresh and potable.
- I. Plaster Sand: Shall be clean, free from silt or clay, and graded as follows:

Sieve Size	% Passing
#4	100
#8	95 - 100
#16	70 - 100
#30	40 - 70

The following mix shall be used for the refinement course:

3 gallons Plaster Sand  
2 gallons Refinement Course Material  
1/2 gallon Binder  
Water to make a free-flowing mix.

### **PART 3 EXECUTION**

#### **3.01 SURFACE PATCHING AND CRACK REPAIR**

- A. Contractor to first clean courts areas and shall be free of sand, clay, grease, dust, salt, organic matter, or other foreign matters.
- B. All identified surface cracks are to be filled with crack filler in accordance with the product's published installation instructions. Do not install when rainfall is imminent or extremely high humidity prevents drying. Do not apply unless surface and air temperature are 50°F and rising, or do not apply if surface temperature is in excess of 140°F.
- C. The contractor shall flood all the courts and then allow draining. If after 30 minutes on a 70 degree F day, contractor shall define and mark all areas holding enough water to cover a nickel. These identified and marked depressions shall be filled with the Acrylic Patching Mix, 3 gallons of Court Patch Binder, 100 lbs. 60-80 silica sand, 1 gallon Dry Portland Cement (Type I). After defined areas are dry, prime with tack coat mixture of 2 parts water/1 part Court Patch Binder. Allow tack coat to dry completely. Spread Court Patch Binder mix true to grade using a straight edge (never a squeegee) for strike off. Steel trowel or wood float the patch so that the texture matches the surrounding area. Never add water to mix.

Light misting on surface and edges to feather in is allowed as needed to maintain work ability. Allow to dry thoroughly and cure. No work from this stage on shall commence until the Owner has accepted the surface.

### 3.02 REFINEMENT COURSE

- A. The first step of the refinement course process shall be to flood the entire area with water. Areas that retain water greater than one-sixteenth inch (1/16") in depth after one hour (at 70° F) shall be patched and leveled.
- B. Three squeegee coats of sanded refinement course material shall be applied by pouring from a can or wheeled container to continuous parallel lines and spreading immediately with rubber-faced squeegees or long handled hair brooms. Apply squeegee coats in the following directions:
  - 1. First coat - apply lengthwise of the court.
  - 2. Second and third coat - apply cross court.The squeegee or broom shall be pulled on an angle from the line of spread so as to continually pool the material toward the operator and not to overflow or "spill" on its forward edge away from the operator. After each coat has dried, all ridges shall be removed with scrapers and the surface thoroughly rolled.
- C. The minimum application shall be at the rate of not less than thirty (30) gallons of undiluted refinement course material per 1,000 square feet.
- D. Upon completion of rolling, the area shall be water flooded and all depressions holding over one-eighth inch (1/8") depth of water shall be filled with the refinement course material, allowed to cure, and then finish rolled with a 2- to 3-ton tandem roller. The finished surface shall be smooth, free of ridges, valleys and tool marks.

### 3.03 SURFACE SEALER

- A. Filler Coats: Over the completed refinement course apply two (2) coats of approved product. Method of application shall be in strict accordance with the manufacturers printed instructions. Color shall be full depth of court coverage.
- B. Sealer Coat: The final surface sealer shall be applied in strict accordance with the manufacturers printed instructions. Color shall be full depth of court coverage.

### 3.04 PLAYING LINES

- A. Following the drying of the finished surface, lines shall be striped using only acceptable white latex line paint. All measurements shall conform to the United States Tennis Association dimensions and shall be two (2) inches in width. All lines shall be straight and true, with no irregular edging.

### 3.05 TRAFFIC

- A. Following the painting of lines, the courts shall be allowed to cure for a minimum of four (4) days before being opened to play. Gates shall be secured at all times until project Final Acceptance.

3.06 CLEANUP

- A. Upon completion, the contractor shall remove all over-spray, splatter, containers, surplus materials and debris, and leave the site in a clean and orderly condition acceptable to the Owners Representative.

3.07 GUARANTY

- A. This contractor shall guaranty all tennis court paving and surfacing against peeling of surface and other defects of materials or workmanship for a period of one year from Final Acceptance.

END OF SECTION



SECTION 32 31 13

**CHAIN LINK FENCING**

**PART 1 GENERAL**

1.01 SUMMARY

- A. Furnish all labor, materials, equipment, facilities, transportation and services to complete all chain link fencing installations and related work as shown on the Drawings and/or specified herein.
- B. Scope of work:  
The general extent of the chain link fencing improvements is shown on the Drawings, and can include but is not necessarily limited to the following:
  - 1. Galvanized chain link fabric, posts, gates, hardware, and related appurtenances
  - 2. Thermally fused and bonded PVC coated ("vinyl coated") Galvanized chain link fabric with painted posts, gates, hardware, and related appurtenances
  - 3. Chain link fence with integrally woven privacy plastic "slats"
  - 4. Concrete footings and/or mowbands
- C. Related sections can include, but may not be limited to:
  - 1. Section 12 93 00 - Site Furnishings
  - 2. Section 03 30 00 - Cast-In-Place Concrete
  - 3. Section 32 90 00 – Landscaping
  - 4. Section 05 12 00 – Structural Steel

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. ASTM:
  - 1. A53/A53M-04a Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
  - 2. A123/A123M-02 Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
  - 3. A153/A153M-04 Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
  - 4. A392-03 Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric
  - 5. ASTM F1043 Standard Specification for Strength and Protective Coatings on Steel Industrial Chain Link Fence Framework
  - 6. ASTM F1083 Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures
  - 7. ASTM A500 (HSS) Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- B. Chain Link Fence Manufacturers Institute (CLFMI)
- C. Industrial Steel Guide for Fence, Rails, Posts, Gates and Accessories
- D. State of California Department of Transportation Standard Specifications, current ed.

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's descriptive literature and/or standard catalog "cut-sheets" of all materials, coatings, fittings and equipment proposed to be furnished and installed under this portion of the work. Include the manufacturer's name and catalog number for each item where applicable. Clearly annotate (star or asterisk-in black ink) which portions of "cut-sheets" are applicable if more than one product is shown.
- B. Shop Drawings: Submit complete Shop Drawings for all different types and sizes of gates and

fencing systems.

1. Shop Drawings shall include, but may not be limited to, all information regarding clearances, connections, components and any miscellaneous related appurtenances (such as locking mechanisms etc.), as well as concrete footing and reinforcement information
- C. Installation Instructions and/or Drawings: Submit as applicable.
- D. Samples:
1. Color selections for finishes of "vinyl coated" and/or "powder coated" fencing systems.
  2. Sample of privacy slat system

#### 1.04 SEQUENCE AND SCHEDULING

- A. Contractor shall coordinate construction timing of all chain link fencing and related work with installation of concrete work (Section 32 13 13 - Portland Cement Concrete) and all other work.

## PART 2 PRODUCTS

2.01 MATERIALS - General Note: It is intended that all fencing, by area, receive the same finish coating wherever possible. Nuts, bolts, applicable moving portions of hinges etc. shall be painted to match with PVC touch-up paint in vinyl or powder coated systems.

- A. Fabric:
1. Selvage: Knuckled finish top and bottom.
  2. Steel Fabric: Comply with Chain Link Fence Manufacturers Institute (CLFMI) Product Manual. Furnish one-piece fabric widths for fencing up to 16 feet high. Wire sizes includes zinc coating.
  3. Size: Two (2) inch mesh, 9-gauge (0.148 inch diameter) unless noted otherwise.
  4. Galvanized Wire: Zinc coated wire-ASTM A 392, Class 1, with not less than 1.2 oz. zinc per sq. ft.
  5. Thermally Fused and Bonded PVC (vinyl coated) Finish: ASTM F 668 Class 2b, 7mil (0.18 mm) thickness thermally fused over zinc-coated wire. Color shall be: BLACK
- B. Framing:
1. Strength requirements for posts and rails shall conform to ASTM F 1043.
  2. Pipe shall be straight, true to section, material, and sizes specified, and shall conform to the following weights per foot:

<u>NPS in inches</u>	<u>Outside Diameter (OD) in inches</u>	<u>Type 1 Steel</u>
1	1.315	1.68
1.25	1.660 (1-5/8")	2.27
1.5	1.900 (2")	2.72
2	2.375 (2-1/2")	3.65
2.5	2.875 (3")	5.79
3	3.500	7.58
3.5	4.000	9.11
4	4.500	10.79
6	6.625	18.97
8	8.625	28.55

- C. Steel Framework:
1. Posts, Rails, Braces, and Gate Frames:
    - a. Type I Steel Pipe: Hot-dipped galvanized steel pipe conforming to ASTM F 1083, plain ends, standard weight (Schedule 40) with not less than 1.8 oz. zinc

per sq. ft. of surface area coated.

2. End, corner, and pull posts for following fabric heights: Per plans.
3. Line or intermediate posts for following fabric heights: Per plans
4. Top, Bottom and Horizontal Intermediate Rails:
  - a. Top, bottom and horizontal intermediate rails (as applicable) shall be 1.66" OD (1-5/8"OD)
5. Gate Posts: Furnish posts for supporting single gate leaf, or one leaf of a double gate installation, for nominal gate widths as follows: Per plans
6. Gate Frames: Furnish frames (single or double gate), for nominal gate widths as follows:
  - a. 6 feet to 10 feet: 1.90" OD (2" OD)
  - b. Under 6 feet: 1.66" OD (1-5/8"OD)
7. For fencing with vinyl coated fabric, all posts and railings to be factory powder coated. Color shall match vinyl color.

**D. Fittings and Accessories:**

1. Material: Comply with ASTM F 626. Mill-finished aluminum or galvanized iron or steel, to suit manufacturer's standards.
  - a. Zinc Coating: Unless specified otherwise, steel fence fittings and accessories shall be galvanized in accordance with ASTM A 153, with zinc weights per Table 1 of ASTM A153.
2. Tension Wire: 7-gauge (0.177 inch diameter) coil spring steel with finish to match fabric (where applicable).
3. Tie Wires: 9 gauge (0.148 inch diameter) steel with finish to match fabric.
4. Post and Line Caps: Provide weather tight closure cap for each post. Provide line post caps with loop to receive wire or top rail with finish to match fabric.
5. Tension Bars: Hot-dip galvanized steel with minimum length 2 inches less than full height of fabric, minimum cross-section of 3/16 inch by 3/4 inch and minimum of 1.2 oz. zinc coating per sq. ft. of surface area.
6. Tension Clips: Minimum 3/4 inch wide 12-gauge (.105 inch) thick with finish to match fabric.
7. Truss Rods: Hot dipped galvanized steel rods with a minimum diameter of 5/16" (7.9 mm).
8. Hinges: Master Halco heavy duty, or acceptable equal.
9. Concrete: Concrete for footings shall be Class B minimum. Refer to structural plans.
10. Privacy Plastic Slats: Shall be the pre-woven variety in 3.5" x 5.5" galvanized chain-link mesh. Color shall be determined by Owner's Representative; submit color choices for review.
11. For fencing with vinyl coated fabric, fittings and accessories shall be factory powder coated or painted with two applications of exterior grade paint. Color shall match vinyl color.

- E. Edgebands:** All fencing shall be provided with concrete edgebands unless otherwise noted. Edgebands shall have a minimum 4" clearance from edge of post to edge of concrete. Gates will have the same edgeband width as adjacent fencing.

**PART 3 EXECUTION**

**3.01 PREPARATION**

- A. Prior to excavation, layout all fencing locations for review and acceptance by Owner's Representative.

**3.02 INSTALLATION**

- A. Conform to layout shown on Drawings, except as modified by the Owner's Representative.

- B. Erect fencing in strict conformance with reviewed and accepted Drawings, Shop Drawings, and manufacturer's recommendations.
- C. Install new footings as shown on Drawings.
- D. Posts shall be installed vertical and plumb.
- E. General: Install fence in compliance with ASTM F 567. Do not begin installation and erection before final grading is completed, unless otherwise permitted.
- F. Excavation: Drill or hand-excavate holes for posts to diameter and spacing indicated in firm, undisturbed or compacted soil.
  - 1. Unless noted otherwise, excavate holes for each post to minimum diameter recommended by fence manufacturer, but not less than 4 times largest cross section of post.
  - 2. Unless noted otherwise, excavate hole depths approximately 3 inches lower than post bottom, with bottom of posts set not less than 36 inches below finish grade surface.
- G. Setting Posts: Center and align posts in holes 3 inches above bottom of excavation. Space chain link posts maximum 8 feet o.c. unless noted otherwise. Surface mount posts with mounting plates where indicated. Fasten with lag bolts and shields.
- H. Top Rails: Run rail continuously through line posts caps, bending to radius for curved runs and at other posts termination into rail end attached to posts or post caps fabricated to receive rail. Provide expansion couplings as recommended by fencing manufacturer.
- I. Bottom Rails: Install bottom rails between posts with fittings and accessories as shown in Drawings (as applicable).
- J. Brace Assemblies: Install braces so posts are plumb when diagonal rod is under proper tension.
- K. Tension Wire: As applicable, install at bottom of fabric (and at top if top rail is not specified) as shown in Drawings. Install tension wire before stretching fabric and attach to each post with ties. Secure wire to fabric with 12.5 gauge hog rings at 24" on center maximum.
- L. Fabric: Leave approximately 2 inches between finish grade and bottom selvages unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Install fabric on infield or primary use side of fence (unless noted otherwise), and anchor to framework so that fabric remains in tension after pulling force is released.
- M. Tension Bars: Provide one bar for each gate and end post, and two for each corner and pull post, except where fabric integrally woven into post. Thread through fabric, and secure to end, corner, pull, and gate posts with tension clips spaced not over fifteen (15) inches on center.
- N. Tie Wires: Use U-shaped wire of proper length to secure fabric firmly to posts and rails with ends twisted at least 2 full turns. Bend ends of wire to minimize hazard to persons or clothing. Tie fabric to line posts 12 inches maximum on center and to rails and braces 24 inches maximum on center.
- O. Fasteners: Install nuts for tension clips and hardware bolts on side of fence opposite fabric side. Peen ends of bolts or score threads to prevent removal of nuts. Cut all bolts within three threads of nut or less.
- P. Welding: All welds shall be shop fabricated prior to galvanizing unless otherwise acceptable to Owner's Representative. Any and all field welds shall be completed by a Certified Structural Welder and shall be "spray-galvanized" or otherwise treated subject to the discretion of the Owner's Representative.

- Q. All bolts shall be cut back to within three threads of the nut.
- R. All fence post caps and backstop caps shall be spot welded to post.
- S. All hinges shall be spot welded to the gate post.

END OF SECTION

## SECTION 32 80 00

### IRRIGATION

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Furnish all labor, materials, equipment, facilities, transportation and services to complete all water supply, irrigation system and related work as shown on the Drawings and specified herein.
- B. Scope of work:  
The general extent of the water supply and irrigation system work is shown on the Drawings and may include, but is not necessarily limited to the following:
  - 1. Installation of water backflow prevention and flow sensing system
  - 2. Installation of automatic irrigation systems and controls
- C. Related sections can include, but may not be limited to:
  - 1. Section 31 01 90 - Landscape Maintenance
  - 2. Section 31 23 00 - Excavation, Backfilling and Compacting
  - 3. Section 32 90 00 - Landscaping

##### 1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. American Society for Testing and Materials (ASTM)
  - 1. B 62-85 - Standard Specifications for Composition Bronze or Ounce Metal Castings.
  - 2. D 1784-81 - Standard Specifications for Rigid (PVC) Compounds and Chlorinated Poly (vinyl Chloride) (CPVC) Compounds.
  - 3. D 1785-86 - Standard Specifications for (PVC) Plastic Pipe, Schedules 40 and 80.
  - 4. D 2241-84 - Standard Specifications for PVC Pressure-Rated Pipe (SDR Series).
  - 5. D 2564 Standard Specifications for Solvent Cements for (PVC) Plastic Pipe and Fittings.
  - 6. F477 Specification for Elastomeric seals (gaskets) for joining plastic pipe.
- B. National Sanitation Foundation (NSF), requirements for Seal of Approval.
- C. Plastics Pipe Institute (PPI), recommendations for hydrostatic design stresses for PVC pipe.
- D. State of California Department of Transportation Standard Specifications, Current Edition.
- E. Permits and Fees: Contractor is responsible to obtain all required permits and pay all associated fees unless otherwise noted.

##### 1.03 SUBMITTALS

- A. Conform to requirements of front end Sections, Submittals and/or applicable Division One and Division Two specifications, General Conditions and Special Provisions.
- B. Submit the following at the beginning of the project:
  - 1. Four (4) copies of Materials List of all products specified.
  - 2. Four (4) copies of the Product Data or cut sheets of all products specified. No substitutions shall be permitted without written acceptance by the Owner's Representative.
- C. Submit the following at project close-out:
  - 1. Final Record Drawings: Two sets of these shall be produced, one for placement at or within the irrigation controller cabinet reduced to 11" x 17". One full size set for storage at another location desired by the Owner's Representative.
  - 2. Both sets shall have all the irrigation valve zone lateral lines color-coded so as to readily distinguish between adjacent zones. The valve size, station number and gallons per minute

shall be legible at each valve and shall match how the controller is wired. Additionally, each valve shall be annotated to describe which type of irrigation it is, ie: spray, rotor, bubbler, etc.

3. The color-coded copies shall then be professionally laminated in minimum 5 mil clear plastic.
4. Turn-over Materials: Provide one (1) each of the following to the Owner's Representative:
  - a) One (1) Quick Coupler attachment key equipped with standard thread hose bib per (5) Quick Couplers installed on the project.
  - b) One (1) key for locking Quick Coupler covers per (5) Quick Couplers installed on the project.
5. Full set of remaining nozzles for each rotor sprinkler

#### 1.04 RECORD DOCUMENTS

- A. Conform to requirements of front end Sections, Submittals and/or applicable Division One and Division Two specifications, General Conditions and Special Provisions.
- B. Accurately record locations of all piping and equipment that varies from what is shown on the Drawings horizontally to within one (1) foot and vertically to within 0.5 feet.

#### 1.05 QUALITY ASSURANCE

- A. Unless otherwise specified, install all materials in accordance with manufacturer's recommendations.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store PVC pipe in a neat and orderly manner fully supported and protected from sunlight.
- B. All equipment shall be delivered, unloaded and handled so as to protect from damage at all times.

#### 1.07 PROJECT/SITE CONDITIONS

- A. PVC shall not be cemented during wet conditions per the discretion of the Owner's Representative.
- B. Trench excavation and backfilling shall not be performed during excessively wet conditions per the discretion of the Owner's Representative.

#### 1.08 SEQUENCE AND SCHEDULING

- A. Contractor shall be solely responsible for coordinating, sequencing and scheduling all work with all applicable trades and/or sub-contractors so as to insure proper and timely performance.

#### 1.09 GUARANTY

- A. Conform to requirements of front end Sections, Submittals and/or applicable Division One and Division Two specifications, General Conditions and Special Provisions.
- B. Contractor shall provide a written guaranty covering entire system against defects in installation, workmanship and equipment for a period of one year from date of Final Acceptance.
- C. Contractor shall make necessary repairs to the system as well as to other work affected by defects in the system during guaranty period. Repairs shall be made at the Contractor's sole expense.

#### 1.10 MAINTENANCE

- A. Conform to Section 31 01 90 - Landscape Maintenance.
- B. Service: Contractor shall service and maintain system during specified Landscape Maintenance Period.

- C. The entire irrigation system shall be under full automatic operations for a period of two days prior to any planting.
- D. Final Acceptance and start of guaranty period shall occur no later than the end of the specified Landscape Maintenance Period.

## **PART 2 PRODUCTS**

### **2.01 GENERAL**

- A. Use only new materials of brands shown on Drawings, specified herein or as acceptable to the Owner's Representative.

### **2.02 PIPE**

- A. PVC Pipe: Polyvinyl chloride (Type I) plastic pipe PVC 1120 and NSF approved per plan. Constant-pressure mainline piping 1-1/2 inches and smaller shall be schedule 40; constant-pressure mainline piping 2 inches to 3 inches shall be class 315 or class 200, or C900 class 200 DR 14 if the system is using recycled water. Intermittent-pressure lateral piping shall be schedule 40. Copper pipe shall be type "K". If the system is operated with recycled water PVC Pipe is to be "Purple Pipe".

### **2.03 PVC FITTINGS**

- A. PVC Fittings: Polyvinyl chloride (Type I) plastic fittings 1120, Schedule 40 or Schedule 80 as may be noted in the Drawings.
- B. PVC Nipples: Polyvinyl chloride (Type I) plastic fittings 1120, Schedule 80.

### **2.04 SWING JOINTS**

- A. Swing Joints for pop-up heads shall be as per detail.

### **2.05 VALVES AND SENSORS**

- A. Gate Valves / Ball Valves: (GV/BV) As specified on Drawings.
- B. Remote Control Valves: (RCV) As specified on Drawings.
- C. Quick Coupling Valves: (QCV) As specified on Drawings.

### **2.06 PLASTIC VALVE BOXES**

- A. Gate Valves / Ball Valves: GV/BV valve boxes shall be round model equivalent to Carson Model 910-10 with 910-T locking lid. Boxes shall be labeled as "Irrigation – Valve" on lid.
- B. Remote Control Valves: RCV valve boxes shall be rectangular model equivalent to Carson 1419-12 with 1419-T locking lid for 1" and 1-1/2" valves and 1730-12 with 1730-T locking lid for valves 2" and larger. Boxes shall be labeled as "Irrigation – RCV" on lid.
- C. Quick Coupling Valves: QCV valve boxes shall be round model equivalent to Carson Model 910-10 with 910-T locking lid. Boxes shall be labeled as "Irrigation – QC" on lid.
- F. Valve Boxes: Valve boxes shall have locking or bolt down type lids. Approved box manufactures as equals: Applied Engineering Inc., NDS, Christy and Carson Industries.
- G. Color of plastic boxes shall be green, unless the irrigation system is designed for recycled water, in which case boxes shall be purple.



## 2.07 CONCRETE VALVE BOXES

- A. Quick Coupling Valves: QCV valve boxes shall be round model equivalent to Christy Model G05T with G05CT locking Lid Boxes shall be labeled as "Irrigation – QC" on lid.
- B. Valve Boxes: Valve boxes shall have locking or bolt down type lids.
- C. Valve Boxes: Valve boxes shall be bolt down type lids and of a variety.

## 2.09 VALVE WIRING

- A. Low Voltage:
  - 1. Conductors:
    - a) Control wires shall be UL rated for direct burial, Type UF, 14 gauge wire. Insulating jacket color shall be red.
    - b) Common wires shall be UL rated for direct burial, Type UF, 12 gauge wire. Insulating jacket color shall be white.
    - c) Spare control wires shall be UL rated for direct burial, Type UF, 14 gauge wire, Insulating jacket color shall be blue.
    - d) Spare common wire shall be UL rated for direct burial, Type UF, 12 gauge wire. Insulating jacket color shall be green.
  - 2. Splice connectors: 3M "DBY" splice connectors or acceptable equal.

## 2.10 CONNECTING COMPOUNDS

- A. Primer: IPS Corporation Weld-on #P-70.
- B. Cement:
  - 1. IPS Corporation Weld-on #705 low VOC PVC solvent cement for Class 200 P.V.C. or schedule 40 P.V.C. (up to 6" diameter).
  - 2. IPS Corporation Weld-on #711 low VOC PVC solvent cement shall be used for larger pipe diameters and schedule 80 P.V.C.
  - 3. IPS Corporation Weld-on #795 low VOC PVC solvent cement for flexible P.V.C. to rigid P.V.C. connections.

## 2.12 SPRINKLER HEADS

- A. Sprinkler Heads: As specified on Drawings. As applicable, install with purple head caps or rotor covers if system is designed for recycled water.

## 2.13 ADDITIONAL MATERIALS

- A. Pipe Detection Tape: "Sentry Line" three (3) inch wide, detectable, "Caution Water Line Buried Below" tape as available from Terra Tape Inc. Houston, Texas (800)-231-6074 or acceptable equal.
- B. Sleeves: All sleeves shall be PVC class 200. Install sleeves in locations and at the depths shown on the drawings. Sleeves shall extend a minimum of 6" past the above hard surface for ease of location.
- C. Teflon tape shall be of a variety commonly used for wrapping threaded connections.
- D. Reinforced Tracer Wire: Copperhead Reinforced Tracer Wire available at Copperhead Industries, LLC. 877-726-5644.
- E. Valve Tags: Plastic pre-labeled station tags.
- G. Drain Rock: Shall be ¾" washed drain rock.

## PART 3

## EXECUTION

### 3.01 EXAMINATION

- A. Prior to starting work, test and verify that water pressure levels meet the requirements specified on the Drawings. Notify the Owner's Representative immediately of any discrepancies.
- B. Irrigation plans are diagrammatic. Pipe lines shown parallel in the Drawings may be placed in a common trench, provided that a minimum horizontal distance of three inches (3") is maintained between buried lines.
- C. Sprinkler heads are shown schematically. Suspected discrepancies in coverage or sizes of areas to be irrigated shall be brought to the attention of the Owner's Representative prior to installation. Contractor shall re-direct work to avoid delay while awaiting resolution.

### 3.02 PREPARATION

- A. Contractor shall make provisions and take necessary precautions to protect existing work or features.
- B. Layout: Coordinate lay-out of system with Owner's Representative as necessary.

### 3.03 TRENCHING

- A. Conform to Section 31 23 00 and/or applicable Division One and Division Two specifications, General Conditions and Special Provisions.
- B. Excavate trenches with vertical walls, uniform bottom, free of deleterious materials, and wide enough for pipes to lay side by side, fully supported on bottom. There shall be a minimum three inch (3") clearance between all pipes.
  - 1. No lines shall be installed parallel to and directly over another line.
  - 2. When lines must cross, the angle shall be forty-five to ninety degrees, and a minimum of three inch (3") vertical clearance shall be maintained.
- C. Provide minimum coverage depths as follows:
  - 1. Mainline: 24" in landscape areas, 30" in sleeves under paving.
  - 2. Lateral Lines: 18" in landscape areas, 30" in sleeves under paving.
- D. Hydraulic driving methods shall not be used under paved surfaces.

### 3.04 PIPE INSTALLATION

- A. Comply with applicable Division One and Division Two specifications, General Conditions and/or Special Provisions and manufacturer's instructions.
- B. Rubber Ring Seal Joint:
  - 1. Use factory-made male end or prepare field-cut male end to exact specifications of factory-made end.
  - 2. Carefully clean bell or coupling and insert rubber ring without lubricant. Position ring carefully according to manufacturer's specifications.
  - 3. Lubricate male end according to manufacturer's instructions and insert male end to specified depth. Use hands only when inserting PVC pipe.
- C. Thrust Blocks:
  - 1. Thrust blocks shall be provided on 3" and 4" main lines where specified and as necessary to resist system pressure on pressurized lines and fittings. Thrust blocks shall be concrete and the size shall be based on an average soil safe bearing load of 3,000 pounds per square foot.
  - 2. Main lines of 3" and 4" with operating pressures of 90 PSI or more shall have mechanical restraints at all changes of flow direction.

3. Main lines 6" and larger shall have ductile iron fittings with joint restraints installed at all changes in flow direction.
  4. Form thrust blocks in such a manner such that concrete comes in contact only with the fittings. Thrust blocks shall be between solid soil undisturbed and the fitting.
  5. Install thrust blocks as shown in Drawings and as described above.
- D. Solvent Welded Joints:
1. Assemble above ground where possible.
  2. Cut square, ream, and thoroughly clean.
  3. Make joint using specified primer and cement, continuously wiping off excess.
  4. Allow sixty (60) minutes of set-up time before handling and twenty-four (24) hours curing before applying water pressure.
- E. Threaded Joints:
1. Use Teflon tape on all pressurized, threaded plastic to plastic and plastic to steel joints.
  2. Hand tighten and use only light strap-type friction wrench pressure to complete.
- F. Snake pipe a minimum of one (1) additional foot per one hundred (100) feet of pipe to allow for expansion and contraction.
- G. Pipe shall be installed as specified and generally as shown in Drawings.
- H. Cap or plug openings as soon as pipes have been installed to prevent intrusions of debris.
- I. Sleeves:
1. Install pipe sleeves where necessary, where shown and at all points where pipes pass through concrete or masonry. In footings, install sleeving that allows one inch (1") min. clearance around pipe(s).
  2. Each end of sleeve shall extend a minimum of six inch (6") beyond edge of paving or structure above. Provide removable non-decaying plug or cap at each end of sleeve, to prevent earth from entering pipe.
- J. Thoroughly flush system prior to installing valves and nozzles.
- K. Install pipe detection tape and reinforced tracer wire above mainline.

### 3.05 EQUIPMENT AND INSTALLATION

- A. Remote Control Valves:
1. Install as shown in Drawings.
  2. Valve boxes shall be set plumb and square with adjacent structures.
  3. Valves shall be installed in valve boxes to provide 3" clearance between the highest point of the valve and the bottom of the valve box lid.
  4. Install valve tags in an acceptable manner with valve station and controller number.
  5. Provide twelve (12) inches minimum separation when valve boxes are grouped together and align in a parallel, even, and orderly manner.
  7. Locate valves in shrub/ground cover areas whenever possible.
- B. Gate Valves / Ball Valves:
1. Install as shown in Drawings.
  2. Gate Valves shall be installed in valve boxes to provide a minimum of 3" clearance between the highest point of the valve and the bottom of the valve box lid.
  3. Gate valves shall not be installed in any area that is within the athletic field of play. All valves shall be located within valve boxes set 12" from fencing or edgebands as per details.
- C. Quick Coupler Valves:
1. Install as shown in Drawings.
  2. Quick Coupling Valves shall be installed in valve boxes to provide 2" clearance between the highest point of the valve cover and the bottom of the valve box lid.

3. All quick couplers in synthetic fields shall be located against synthetic turf edgeband / curb.
- D. Control Wire:
1. Connect control wires to controller in sequential arrangement according to identification number in the Drawings. Label each controller station with permanent non-fading labels indicating identification number of valve controlled.
  2. Install as shown in Drawings.
  3. Bundle multiple wires with tape or ties at twenty (20) foot intervals maximum. Do not tape wires in sleeves.
  4. Make all splices in valve boxes using only specified connectors.
  5. Provide thirty six (36) inch wire coil at each remote control valve and at all mainline directional changes.
  6. Install two spare control wires and one looped spare common wire to run by, and loop into, every remote control valve on system. Terminate wires inside controller enclosure unconnected and clearly labeled as extra.
  7. All wiring under paving shall be installed in a PVC pipe sleeve large enough to allow withdrawal and insertion of individual proposed wires and room for (12) additional wires.
  8. If any control wire run is over 2000', up-size applicable control wire to be 12 gauge.
- G. Spray Heads:
1. Install as shown in Drawings.
  2. Install plumb with finish grade.
  3. Thoroughly flush all lines prior to installing nozzles.
- H. Tree Bubblers:
1. Install in drain pipe sump as may be shown in Drawings.
  2. Coordinate installation with planting operations to ensure timely and proper placement of heads.

### 3.06 FIELD QUALITY CONTROL

- A. General:
1. Notify Owner's Representative for the following reviews, with 2 working days minimum notice:
    - a.) Pressure testing mains and laterals prior to installing heads.
    - b.) Coverage test prior to planting turf shrubs and or groundcover.
    - c.) Pre-maintenance observation prior to acceptance of installed irrigation system.
    - d.) Final observation prior to release of project to Owner.
  2. Contractor shall provide all equipment and personnel required to conduct tests.
  3. Provide up-to-date Project Record Drawings at each review.
  4. If Owner's Representative is called out for review prior to the system being ready as specified, the contractor shall be back-charged for the full cost of the review.
- B. Pressure Tests:
1. Do not install remote control valves, quick couplers, or any other valve assembly until testing of pressure main lines has been accepted by the Owner's Representative.
  2. Testing shall occur with trenches open. Small amounts of backfill between fittings shall be allowed to prevent pipe displacement. All fittings shall be visible prior to testing.
  3. Test all pressure supply lines under hydrostatic pressure of 125 p.s.i. minimum. Pipe shall hold pressure for a period of six (6) consecutive hours with no more than five (5) p.s.i. loss in order to pass test.
  4. Lateral lines shall be tested under full line pressure for a period of one (1) hour prior to backfilling. Cap all heads and center load pipe between fittings prior to testing.
  5. Correct all deficiencies revealed by tests to the satisfaction of the Owner's Representative.
- C. System Flushing:
1. After sprinkler pipe lines and risers are in place and connected, and prior to installation of automatic valves, quick couplers, and sprinkler nozzles, thoroughly flush all lines with water to completely clean lines of debris.
  2. Install sprinkler nozzles only after lines have been flushed to the satisfaction of the Owner's

Representative.

- D. Coverage Tests:
  - 1. Perform coverage tests after all systems are completed and operational, after finish grading (Refer to Section 32 90 00 - Landscaping) has been completed, but prior to any planting, in the presence of the Owner's Representative.
  - 2. Correct all deficiencies to the satisfaction of the Owner's Representative prior to planting.
  - 3. No overspray or runoff of recycled water is allowed on any non-approved use area.

### 3.07 BACKFILLING

- A. General:
  - 1. Backfill only after specified tests have been performed and accepted.
  - 2. Clean trenches of all debris and deleterious material before backfilling.
  - 3. Backfill, as shown in Drawings, with native material granular in nature and free from deleterious material. Install pipe detection tape over entire run of mainline as shown in Drawings.
  - 4. Compact trenching to 95% relative density under pavement and 85% relative density within planting areas.
  - 5. Dress off and compact trench surfaces with finish grade in a manner to ensure no settling of trenches will occur.

### 3.08 ADJUSTING

- A. Adjust and balance system to eliminate over spray and fogging/misting and as directed by Owner's Representative.

### 3.09 DEMONSTRATION

- A. Instruct Owner's personnel in complete and proper operation and maintenance of system prior to Final Acceptance.

### 3.10 FINAL REVIEW

- A. Provide Owner's Representative with all Record Drawing submittals, turn-over materials, salvaged items and warranty requirements prior to Final Review.

END OF SECTION

SECTION 32 90 00

**LANDSCAPING**

**PART 1 GENERAL**

1.01 SUMMARY

- A. Furnish all labor, materials, facilities, transportation and services to complete all landscaping and related work as shown on the Drawings and specified herein.
- B. Scope of work:  
The general extent of the landscaping is shown on the Drawings and can include, but may not be limited to the following:
  - 1. Soil preparation
  - 2. Fine grading
  - 3. Turf planting
  - 4. Tree, shrub, and ground cover planting
  - 5. Turf Establishment Period
  - 6. Landscape Maintenance Period
- C. Related sections can include, but may not be limited to:
  - 1. Section 02 41 00 - Site Clearing and Demolition
  - 2. Section 31 01 90 - Landscape Maintenance
  - 3. Section 32 80 00 - Irrigation

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. American Joint Committee on Horticulture Nomenclature (AJCHN):  
Standardized Plant Names
- B. American Association of Nurserymen, Inc. (AAN):  
American Standard for Nursery stock
- C. Sunset Western Garden Book, Lane Publishing CO.
- D. Agricultural Code of California.
- E. State of California Department of Transportation Standard Specifications, Current Edition.

1.03 SUBMITTALS

- A. Conform to requirements of applicable Division One and Division Two specifications, General Conditions and Special Provisions.
- B. Plant Materials and Products:
  - 1. Thirty (30) days prior to planting, submit four (4) copies of documentation that all plants specified have been ordered. Include names and addresses of all suppliers.
  - 2. Substitutions: If substitutions are required, they shall be brought to the attention of the Owner's Representative, at time of submittal, for any requested substitutions.
  - 3. Submit four (4) copies of product data or "cut-sheets" for all products proposed for use.
- C. Samples: Submit four (4) samples of the following (1 quart size "zip-lock" plastic bag min. each):
  - 1. Soil amendment (with current evaluation and sieve analysis)
  - 2. Bark mulch top dress
  - 3. Topsoil (as applicable, with current fertility and structure analyses)
- D. Certificates: Submit "cut-sheets" or other product literature showing certified chemical analysis of

the following:

1. All fertilizers
2. All herbicides

#### 1.04 SOURCE/QUALITY ASSURANCE

- A. Control of work: Comply with Section 5 of the Standard Specifications.
- B. Control of materials: Comply with Section 6 of the Standard Specifications.
- C. Contractor shall employ on-site at all times during execution of this Section at least one person who is thoroughly familiar and experienced with the materials and products being installed and proper methods of their installation. Notify the Owner's Representative immediately of all changes in supervision.
- D. General: Ship plant material and seed with certificates of inspection required by governing authorities. Comply with regulations applicable to plant materials (as applicable).
- E. Tree, Shrubs and Plants: Provide trees, shrubs and plants of quantity, size, genus, species and variety shown and scheduled for landscape work and complying with recommendations and requirements of ANSI Z60.1 "American Standard for Nursery Stock." Provide healthy, vigorous stock, grown in a recognized nursery in accordance with good horticultural practice and free of disease, insects, etc., larvae, and defects such as girdling or bound roots, knots, sun-scald, injuries, abrasions or disfigurement.
- F. Analysis and Standards: Package standard products with manufacturers certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable.
- G. Quality Review: The Owner's Representative shall review all trees and shrubs before planting for compliance with specified requirements for genus, species, variety, size and quantity. Owner's Representative retains right to further review trees and shrubs for size and condition of root systems, trunks, stems branches or structure, buds, etc., and to disqualify unsatisfactory or defective material at any time during the progress of work. Remove disqualified trees or shrubs immediately from project site with materials acceptable to Owner's Representative.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. General:
  1. Handle and store all products of this Section in such a manner as to protect them from damage at all times.
  2. Storage of products on-site shall be coordinated by the contractor in an orderly manner so as not to unnecessarily impede the work or reasonable use of project site.
- B. Plants:
  1. Delivery: Coordinate with Owner's Representative. Provide proper identification for landscape labor force and vehicles at all times while on site.
  2. Storage: Coordinate with Owner's Representative. Provide exposure as required by plant variety and provide wind protection for all plants. Water regularly to maintain thorough moisture in root zone. Temporary, automatic irrigation system will be required at discretion of Owner's Representative if extended storage period becomes necessary. Protect dark colored plant containers from direct exposure to the sun.
  3. Labeling: At least one plant of each variety or type shall be legibly labeled at all times clearly indicating correct plant name as indicated on Drawings. Labels shall be durable with waterproof ink.
- C. Fertilizers:
  1. Deliver in original, unopened containers with original labels intact and legible which state the guaranteed chemical analysis.

- D. Bulk Material:
  - 1. Coordinate delivery and storage of bulk material with Owner's Representative.
  - 2. Confine materials to neat piles in areas acceptable to the Owner's Representative.

#### 1.06 PROJECT/SITE CONDITIONS

- A. Planting operations shall not be conducted under the following conditions, subject to the discretion of the Owner's Representative:
  - 1. Freezing weather
  - 2. Excessive heat
  - 3. High winds
  - 4. Excessively wet conditions

#### 1.07 GUARANTEE

- A. All work executed and all materials provided or used under this Section shall be guaranteed to be free of defects and poor workmanship for a period of one year after Final Acceptance.
- B. All plant materials shall be guaranteed to be in a healthy and thriving condition one (1) year after Final Acceptance, unless it can be proven that the unhealthy or non-thriving material is due to causes other than the contractor's materials or workmanship.
- C. Replace all dead plants and plants not in vigorous condition immediately upon notification by Owner's Representative during Guaranty Period. Replaced plants shall be subsequently guaranteed by the contractor for an additional year following date of replacement.
- D. Repair all defective materials and work as acceptable to the Owner's Representative during guaranty period.

#### 1.08 TURF ESTABLISHMENT PERIOD

- A. Turf Establishment period shall include complete germination **or** rooting of ALL turf and at least two mowings as specified herein, prior to the commencement of the specified Landscape Maintenance Period.

#### 1.09 MAINTENANCE PERIOD

- A. Refer to Section 31 01 90 - Landscape Maintenance for information.

### **PART 2 PRODUCTS**

#### 2.01 TOPSOIL

- A. Topsoil shall be clean on-site material that has been previously stripped from the top 6 inches of original grade or acceptable import material (as applicable). Acceptable topsoil shall be free from "rocks" (rock, stones, rubble, clay clods, etc. over 2" in diameter), roots, toxins, and any other deleterious materials per the discretion of the Owner's Representative. Refer to Section 31 20 00 – Earthwork.
- B. All import topsoil proposed for use shall be submitted to the Owner's Representative for review and acceptance prior to use. Submit samples and current soil fertility and structure analyses in the quantity previously specified.

#### 2.02 BIORETENTION SOIL / SANDY LOAM

- A. General Requirements – Bioretention soil shall meet the requirements set forth in the Municipal Regional Stormwater Permit NPDES No. CAS61 2008 Order No. R2-2009-0074 Attachment L for Bioretention Soil which includes but not limited to:



1. Achieve a long-term, in-place infiltration rate of at least 5 inches per hour and no more than 10" per hour.
2. Support vigorous plant growth.
3. Consist of the following mixture of fine sand and compost, measured on a volume basis: 60%-70% Sand 30%-40% Compost.

## 2.03 FERTILIZERS

- A. General:
  1. All fertilizers shall be of an acceptable brand with a guaranteed chemical analysis as required by USDA regulations.
  2. All fertilizers shall be dry and (except plant tabs) free flowing.
- B. Pre-Plant Fertilizer: Shall be of the following chemical analysis:
  1. 6% Nitrogen.
  2. 20% Phosphoric Acid.
  3. 20% Soluble Potash.
- C. Post-Plant Fertilizer: Shall be of the following chemical analysis:
  1. 16% Nitrogen
  2. 6% Phosphoric Acid
  3. 8% Soluble Potash
- D. Plant Tabs: Shall be "Gro-Power" 7 gram tabs designed for 12 month slow release with the following chemical analysis by weight (no known equal):
  1. 12% Nitrogen
  2. 8% Phosphoric Acid
  3. 8% Soluble Potash
  4. 20% Humus
  5. 4% Humic Acid
  6. 3.5% Sulfur
  7. 2% Iron
  8. Micronutrients

## 2.04 SOIL ADDITIVES

- A. Soil Amendment
  1. Shall be "Super Humus" Compost: As available from BFI Organics Inc. 1995 Oakland Road, San Jose, California, 95131 Ph.: (408) 262-1401 Fx.: (408) 262-0603. Or "Organic Compost" as available from Z-Best Products Inc. 705 Los Esteros Road, San Jose Ca. 95134 Ph.: (408) 934-6152 Fx.: (408) 263-2393. Or acceptable equal. Acceptable material shall meet or exceed the following criteria:
    - a) Gradation: A minimum of 90% of the material shall pass a 2" screen. Material passing shall meet the following criteria:
 

<u>% Passing</u>	<u>Sieve Designation</u>
85-100	9.51 mm (3/8")
50-80	2.38 mm (No. 8)
0-40	500 Micron (No. 35)
    - b) Organic Content: Minimum 25% based on dry weight and determined by ash method. Minimum 240 lbs. organic matter per cubic yard of compost.
    - c) Carbon to Nitrogen Ratio: Maximum 35:1 if material is claimed to be nitrogen stabilized.
    - d) PH: 5.5-8.0 as determined in saturated paste.
    - e) Soluble Salts: Refer to manufacturers specification guidelines.
    - f) Moisture Content: 25-60%
    - g) Contaminants: Shall be free of glass, metal and visible plastics.
    - h) Color / Odor: Color shall be dark brown to black. Odor shall be soil-like, (musty or moldy) not sour, ammonia-like or putrid.

- B. Soil Conditioner: Shall be "Gro-Power Plus (5-3-1) with 4% Sulfur" available through Gro-Power Inc. Ph.: (800) 473-1307. No known equal.
- C. Soil Sulphur: Shall be agricultural grade, 99% pure, pelletized/granular form, not powdered.
- D. Iron Sulphate: Shall be "Gro-Power Premium Green" non-staining iron with micro-nutrients, soil penetrant, trace minerals, and humic acids as available through Gro-Power Inc. Ph.: (800) 473-1307. No known equal.

#### 2.05 MULCH TOP DRESS

- A. Mulch top dress shall be a medium-sized (3/4"-2") decorative chipped wood product free of deleterious and inorganic materials. Material shall be homogenous in appearance, free from sticks or shredded/stringy/fibrous materials.
- B. Golden Nuggets from Sun Up is acceptable. Contact information 800.222.2551 and fax 916.737.8808.
- B. MBC Red from My Bark Company is acceptable. Contact information 209.786.4042 and fax 209.786.4043.

#### 2.06 PLANTS

- A. General
  - 1. All plants shall conform to the species and minimum sizes shown on the Drawings.
  - 2. Quantities shown on the Drawings are for the contractors bidding convenience only. Contractor shall provide plant material to fulfill the intent of the Planting Plan per the discretion of the Owner's Representative.
- B. Condition: All plants shall conform to the following minimum requirements:
  - 1. Nursery grown unless otherwise specified
  - 2. Supplied in appropriate container, balled and burlapped, or bare root as specified on Drawings

#### 2.07 TURF SOD

- A. Sod shall be as follows:
  - 1. Bluegrass and Rye grass blend with the following seed count percentage:
    - a. 80% Bluegrass
    - b. 20% Rye grass
  - 2. Sod shall have a peat or sand / peat base.
  - 3. Sod is available at:
    - a. West Coast Turf – Bayside Blend

#### 2.08 HERBICIDES

- A. Pre-emergent: "Ronstar-G" pelletized, "Surflan" liquid, or acceptable equal.
- B. Other: All other herbicides shall be accepted by Owner's Representative prior to use.

#### 2.09 TREE STAKES AND TIES

- A. Tree stakes and ties shall be as specified on Drawings.

#### 2.10 OTHER MATERIALS

- A. Header Board: As may be specified on the Drawings.
- B. Root Barriers: Shall be model #UB 24-2 "Universal Barrier" as produced by Deep Root Partners

L.P.: Ph.: (800) 458-7668 Fx.: (800) 277-7668 or acceptable equal.

- C. Jute Netting
  - 1. Poly Jute Netting (model 814312) and Anchor Stakes (model 00042579500581 – DeWitt Co. – 905 S. Kings Highway, Sikeston MO 63801, 800-888-9669.
  - Or
  - 2. Geo Jute Netting with 1/2" x 3/4" holes made from hemp use with 8" jute staples.
- D. Weed barrier: Pro Weed Barrier model 24003080 available in 12' by 250' roles (or approved equal). Staples to be 8" jute staples.
- E. Provide all other materials necessary to complete landscaping work as shown on Drawings and specified herein.
- F. All products and materials, including those specified above, shall be new, first quality as acceptable to the Owner's Representative.

### **PART 3 EXECUTION**

#### **3.01 TOPSOIL INSTALLATION**

- A. Subgrade soil shall be cut or filled to the depth required such that after placement of required amount of topsoil and specified preparation procedures have been accomplished, specified finish grades will be attained.
- B. All subgrade soil shall be cross-ripped to a twelve (12) inch minimum depth prior to placement of accepted topsoil. Refer to Preparation (3.02) below.
- C. All planting areas shall contain a minimum of six (6) inches of acceptable topsoil. As applicable and where needed. Only previously accepted topsoil shall be installed.
- D. Refer to Section 31 20 00 - Earthwork for rough grading for information.

#### **3.02 PREPARATION**

- A. Make provisions and take necessary precautions to protect all existing and new improvements from damage during execution of this work.
- B. Initial Preparations:
  - 1. Prior to any work in this section, thoroughly cross-rip (second rip shall be performed at 90 degrees to first rip) all planting area soil to be cross-ripped to a depth of twelve (12) inches.
  - 2. Remove all rocks, sticks, clods, debris, and other deleterious materials over one-half (1/2) inch in diameter from top 6 inches of soil.
  - 3. Float, rake, and roll all planting areas as necessary to establish smooth, clean, non-yielding planting beds.
  - 4. Prevent erosion of the soil between completion of soil preparation and planting.
- C. Concrete Mowbands and Wood Header Boards: Install per Drawings and repeat initial preparations described above as necessary.

#### **3.03 SOIL PREPARATION / FINISH GRADES**

- A. Thoroughly roto-till the following additives into the top six (6) inches of all planting area soil at the following rates per 1,000 square feet.

1.	6 Cubic Yards	Soil Amendment
2.	200 Pounds	Soil Conditioner
3.	35 Pounds	Pre-Plant Fertilizer
4.	20 Pounds	Soil Sulfur

The above additive recipe shall be used for bid purposes only. A site specific fertility test shall be performed by the Contractor after rough grading (and applicable topsoil placement or replacement) operations are complete. The results of the test(s) shall be reviewed by the Owner Representative and direction for amendment additives ratio will be provided. Any variance from "the as-bid" additives or quantities shall be handled by specified procedures relating to changes in the work.

After additives are fully incorporated into the soil, the Contractor shall perform another test to check conformance with the newly recommended materials and quantities. If deficiencies are found, the contractor shall be solely responsible for the cost of adding deficient material as necessary and all re-testing required to reach, and prove conformance.

Contractor shall also schedule seven (7) working days after soil samples have been taken to allow for receipt and evaluation of soil tests at no cost or delay to the project.

Soil testing shall be sent to Gro-Power for tests.

B. Planting Area Finish Grades

1. After tilling in additives and re-compaction to 85% relative compaction, rake all planting areas smooth and set finish grades as follows.
2. After soil preparation, finish grades of all planting areas shall be one (1) inch below all adjacent paving, headers, utility boxes, irrigation boxes etc. Finish grade slopes shall be consistent.
3. All drainage structures (i.e. catch basins, area drains, concrete swales, etc) shall be flush with finish grade to allow for proper drainage. Soil shall be sloped consistently from spot elevations provided to drain.
4. In planting areas to receive mulch, depth of mulch shall taper within three (3) feet of paving edge to a depth from 3" to 1" at edge of pavement.
5. Irrigation head elevation relative to finish grade shall be installed per details.

3.04 SOD INSTALLATION

- A. Soil preparation and fine grading shall be as previously specified. Prior to sod installation, roll turf bed until a smooth, firm surface with uniform grade has been produced. The turf bed shall be reviewed and accepted by the Owner's Representative prior to sod installation.
- B. Sod shall be unrolled into place with careful attention to tight joints with no overlapping or stretching. Stagger the joints in each new row like rows of bricks (18" minimum stagger). Use a sharp knife for shaping around trees, flower beds or borders. Immediately after placement, soak sod areas with water. Roll sod after watering to smooth out bumps and air pockets, and roll again if sod is not even. Water frequently for the first 10 - 14 days with enough water to saturate soil to a depth of 4". DO NOT LET SOD DRY OUT.
- C. Provide and install temporary fencing around all completed sod areas if not protected by other fencing. Use 6' temporary fence for protection.
- D. Refer to Section 31 01 90 for mowing and maintenance procedures. As applicable, the contractor shall remove sod, re-grade any areas that have been rutted from mowers (or otherwise damaged) and replace sod to the satisfaction of the Owner's Representative.
- E. Until project Final Acceptance, should it become evident that certain sod areas have not grown, re-sod the areas immediately with sod of the same type as originally used and maintain as specified.

3.05 TURF ESTABLISHMENT PERIOD

- A. Prior to commencement of specified maintenance period, **all** turf shall be completely germinated and established, and a minimum of two (2) mowings shall have taken place as follows:

1. First mowing shall take place when turf has reached a height of three inches (3") and turf shall be mown to two inches (2"). Submit written request to the Owner's Representative for acceptability of initiating first mowing.
2. Thereafter, turf shall be mown weekly until all turf is sod-like in appearance and quality, and all other contract requirements shall be fulfilled prior to allowing the maintenance period to commence.
3. Contractor shall receive written notice of acceptance of turf establishment to commence with landscape maintenance period.
4. Owner's Representative shall approve any phasing of turf areas to commence into the maintenance period. Areas may be approved in stages but will require contiguous areas of turf that are completely established.

### 3.06 TREE, SHRUB AND GROUND COVER PLANTING

- A. These areas shall receive topsoil and soil amendments per section 3.01, 3.02, and 3.03 prior to commencing with tree, shrub and ground cover planting. Irrigation shall also be installed, reviewed, tested, coverage test approved and operational prior to planting.
- B. Layout: Coordinate lay-out of plants with Owner's Representative for review and acceptance.
- C. Plant Pit Excavation:
  1. Excavate pits to sizes indicated in Drawings.
  2. Thoroughly scarify all sides of plant pits to remove "auger slick" and encourage root penetration.
- D. Set trees and shrubs in pit on tamped backfill base as per Details. Set plumb and face for best appearance. Thoroughly scarify all plant root balls to eliminate any circling roots and to encourage root growth. Set plant so root crown will level with or be slightly above surrounding grade after settlement.
- E. Backfilling:
  1. Backfill mix for 1 gallon size and larger shall consist of 100% native site soil with plant tabs added per manufacturer's recommendations.
  2. Tamp backfill mix under and around root balls.
  3. Flood plant pit when half backfilled; allow to drain.
  4. Complete backfilling. Tamp as necessary, do not over compact.
- F. Palm Pit Backfilling:
  1. Fill the hole with a washed plaster sand.
  2. Water in as you fill hole with sand to wash the material around the exposed roots.
  3. Avoiding leaving any air pockets or voids that will allow the roots to dry out.
  4. The sand backfill should ensure good drainage plus provide rigidity so you may not have to brace the tree.
- G. Watering:
  1. Thoroughly water plants immediately after planting.
  2. Construct water basins as specified in Drawings.
- H. Finish Grade Restoration: Restore finish grades by hand raking. Dispose of excess subgrade soil.

### 3.07 TREE STAKING

- A. Stake trees as shown in Drawings.
- B. Set stakes plumb, without damage to rootball and sufficiently deep to provide necessary support.
- C. Tree ties shall be tied loosely enough to allow movement, yet taut enough to support tree.

3.08 HERBICIDE APPLICATION

- A. Apply in accordance with manufacturers' recommendations.
- B. Apply pre-emergent herbicide to soil prior to placement of bark mulch top-dress.

3.09 MULCH TOP DRESS

- A. Apply three (3) inches of specified bark mulch top dress to all non-turf and hydroseeded planting areas and other areas as may be specified in the Drawings. Trees in hydroseeded areas shall receive the tree well and mulch in the well.
- B. Rake mulch top dress evenly to create a uniform surface and pull bark mulch top dress away from trunks or stalks of plants 1"-2".
- C. Mulch does not dictate finish grade in planting areas. Mulch is to be added to finish grade. Refer to 3.02.

3.10 OTHER MATERIALS

- A. Header Board: Install as shown in the drawings.
- B. Root Barriers: Install as shown in the drawings.
- C. Jute Netting: Install in planting areas as shown on the drawings. Install prior to planting. Stake 36" on center. Install plants and mulch after netting.

3.11 FIELD QUALITY CONTROL

- A. The Owner's Representative shall review and accept the following prior to the contractor proceeding with subsequent work:
  - 1. Preparation - At completion of finish grading and prior to planting, grading tolerances and soil preparation shall be checked for conformance to Construction Documents.
  - 2. Layout - Layout of plants, header board, and other major items shall be as directed and/or accepted by the Owner's Representative.
  - 3. Pre-maintenance review - At completion of this Section, work shall be reviewed to check conformance with Construction Documents. Acceptance shall mark beginning of the specified maintenance period. If acceptance is not given, a punch-list of items requiring attention will be issued to the contractor. One more review will be allowed after contractor certifies in writing that the punch-list has been completed. Punch-list shall be completed to the satisfaction of the Owner's Representative prior to commencement of the Specified Maintenance Period.
- B. All costs incurred from repeat reviews required due to contractor not being prepared or non-conformance with Construction Documents shall be back charged to the contractor.

END OF SECTION

SECTION 33 11 00

DOMESTIC WATER SYSTEMS

**PART 1 GENERAL**

1.01 SUMMARY

- A. Furnish all labor, materials, equipment, facilities, transportation and services to complete all domestic and fire water systems and related work shown on the Drawings and/or specified herein.
- B. Scope of work:  
The general extent of the domestic water and fire system work is shown on the Drawings and can include, but is not necessarily limited to the following:
  - 1. Water supply and distribution system(s):
    - a. Domestic water system, including all pipes, fittings, valves, valve boxes, connections, and fire hydrants
    - b. Compliance with AWWA C-600-87
    - c. Intermediate staking and layout for domestic water system
- C. Related sections can include, but may not be limited to:
  - 1. Section 32 11 00 - Base Courses
  - 2. Section 32 13 13 - Portland Concrete Cement
  - 3. Section 32 80 00 - Irrigation
  - 4. Section 32 90 00 - Landscaping

1.02 REFERENCES AND REGULATORY REQUIREMENTS

- A. AWWA - current edition
- B. California Plumbing Code - current edition
- C. State of California Department of Transportation Standard Specifications, current edition.

1.03 SUBMITTALS

- A. Submit copies of product data or "cut-sheets" for all products proposed for use.

1.04 RECORD DOCUMENTS

- A. Project Record Drawings:
  - 1. Contractor shall provide accurately record locations of utilities remaining, re-routed utilities, new utilities, and newly discovered utilities by horizontal dimensions, elevations, inverts, and slope gradients.

1.05 QUALITY ASSURANCE

- A. Unless otherwise specified, install all materials in accordance with manufacturer's recommendations. Contractor shall make all necessary repairs to the domestic water system as well as to other work affected by defects in the system through project Final Acceptance and specified warranty period. All repairs shall be made at the contractor's sole expense.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store pipe in a neat and orderly manner fully supported and protected from sunlight.
- B. Do not dump pipe off truck. Pipes are to be delivered, unloaded and handled so as to prevent damaging the material.

1.07 PROJECT/SITE CONDITIONS

- A. PVC pipe shall not be cemented during wet conditions as determined by the Owner's Representative.
- B. Trench excavation and backfilling shall not be executed during excessively wet conditions as determined by the Owner's Representative.

1.08 SEQUENCE AND SCHEDULING

- A. Refer to all other Contract Documents, determine the extent and character of related work, and properly coordinate work specified herein with that described elsewhere to produce a complete, operational installation.
- B. Contractor shall be solely responsible for coordinating, sequencing, and scheduling all work with all applicable trades and/or sub-contractors so as to insure proper and timely performance.

1.09 GUARANTY

- A. Contractor shall provide a written guarantee covering entire system against defects in installation, workmanship, and equipment for a period of one year from date of final acceptance.
- B. Contractor shall make necessary repairs to the system as well as to other work affected by defects in the system during warranty period. Repairs shall be made at the Contractor's sole expense.

1.10 MAINTENANCE

- A. Service: Contractor shall service and maintain domestic water system as necessary until project Final Acceptance.

**PART 2 PRODUCTS**

2.01 PIPE AND FITTINGS

- A. General:
  - 1. Pipe materials for domestic and fire water lines shall be in conformance with the Uniform Plumbing Code and local agencies.
  - 2. Plans and details, if shown, are schematic in nature and do not necessarily identify all fittings and appurtenances required to provide a complete installation. The contractor is responsible for providing complete and functional systems.
  - 3. Materials and procedures not specifically addressed herein shall comply with the appropriate AWWA standard.
  - 4. All materials proposed for use shall be in a new, "first class" condition unless otherwise noted.
- B. Water Lines 3 Inches and Greater Diameter:
  - 1. Ductile Iron Pipe (DIP): Pipe shall conform to AWWA C151, minimum Class 52. All ductile iron pipe shall be cement mortar lined in conformance with AWWA C104. Pipe shall be of domestic manufacture; U.S. Pipe Tyton joint, Pacific States; or acceptable equal. Buried ductile iron pipe and fittings shall be wrapped in an 8-mil. thick polyethylene film sleeve. The Contractor shall furnish certification that all pipe supplied for this project has been



- manufactured in compliance with all requirements of AWWA C151.
2. Polyvinyl Chloride Pipe (PVC): Pipe shall conform to AWWA C900, Class 200, cast iron O.D. sizes. Pipe shall be of domestic manufacture; JM Mfg. Co., PW Pipe, Certain teed Fluid-Tite; or acceptable equal. Pipe shall be furnished with integral bells. Spigot end pipe with separate double hub couplings is not acceptable. The Contractor shall furnish certification that all pipe supplied for this project has been manufactured in compliance with all requirements of AWWA C900.
- C. Water Lines 2 (two) Inches and Smaller Diameter: Shall be one of the following:
1. Pipe shall be annealed (soft) Type "K" copper (Cu).
  2. Polyvinyl Chloride Pipe (PVC): Pipe shall conform to AWWA C900, Class 200, cast iron O.D. sizes. Pipe shall be of domestic manufacture; JM Mfg. Co., PW Pipe, Certain teed Fluid-Tite; or acceptable equal. Pipe shall be furnished with integral bells. Spigot end pipe with separate double hub couplings is not acceptable. The Contractor shall furnish certification that all pipe supplied for this project has been manufactured in compliance with all requirements of AWWA C900.
- D. Couplings and Sleeves:
1. General: Couplings and Sleeves shall be a minimum of 200-psi working pressure-rated unless otherwise noted. Couplings and sleeves shall be mechanical joint type.
  2. For DIP and PVC Pipe 3" thru 12":
    - a. Unless otherwise noted, couplings and sleeves for DIP and PVC shall be ductile iron conforming to AWWA C153, and shall be 350 psi working pressure rated. Couplings, sleeves, and accessories shall be of domestic manufacture; U.S. Pipe Trim Tyte, Union Foundry, Tyler; or acceptable equal.
    - b. Unless otherwise noted, flanges on all DIP spools shall conform to AWWA C115.
  3. For PVC Pipe 2 1/2" and smaller:
    - a. Schedule 40, solvent-weld PVC socket couplings.
  4. For Copper Tubing:
    - a. Couplings for copper tubing shall be Mueller 110 compression connections or acceptable equal.
- E. Valves:
1. Gate valves:
    - a. Use gate valves designed for a working pressure of not less than 150 psi.
    - b. Provide connections as required for the piping in which they are installed.
    - c. Provide an arrow on the operating nut or wheel, cast in metal, indicating direction of opening.
  2. Thrust Blocks:
    - a. Thrust blocks shall be constructed of Class "A" concrete. Thrust block dimensions shall conform to the California Plumbing Code.
- F. Valve Boxes
1. Shall be 10" round boxes for gate valves.
  2. Valves shall be labeled with "water" on lid.
  3. Boxes located in landscape areas shall be plastic. Valve boxes shall be round model equivalent to Carson Model 910-10 with 910-4 lid.
  4. Boxes located in paving shall be concrete with concrete lid.
  5. Valve boxes shall have a bolt down lid.
- G. Pipe Detection Tape: "Sentry Line" three (3) inch wide, detectable, "Caution Water Line Buried Below" tape as available from Terra Tape Inc. Houston, Texas (800)-231-6074 or acceptable equal.
- H. Reinforced Tracer Wire: Copperhead Reinforced Tracer Wire available at Copperhead Industries, LLC. 877-726-5644.

## PART 3

## EXECUTION

### 3.01 EXAMINATION

- A. Prior to starting work, test and verify that water pressure levels meet the domestic water system requirements. Notify the Owner's Representative immediately of any discrepancies and re-direct work to avoid delay.
- B. The utility plan and the piping details are diagrammatic. Pipe lines shown parallel in the Drawings may be placed in a common trench, provided that a minimum horizontal distance of six (6) inches is maintained between buried lines, except for sanitary sewer lines, which require ten feet (10') horizontal clearance.

### 3.02 HANDLING

- A. Handle pipe accessories so as to ensure delivery to the trench in sound, undamaged condition.
- B. Use pinch bars or tongs for aligning or turning the pipe only on the bare end of the pipe.
- C. Thoroughly clean interior of pipe and accessories before lowering pipe into trench. Keep clean during laying operations by plugging or other acceptable method.
- D. Before installation, inspect each piece of pipe and each fitting for defects:
- E. Replace all material found to be defective (before or after laying) with sound material meeting the specified requirements, without additional cost to the Owner.
- F. Rubber gaskets: Store in a cool dark place until just prior to time of installation.

### 3.03 PIPE CUTTING

- A. Cut pipe neatly and without damage to the pipe.
- B. Unless otherwise recommended by the pipe manufacturer, cut pipe with mechanical cutter only.
- C. Use wheel cutters when practicable.
- D. Cut pipe square, and remove all burrs prior to use.

### 3.04 TRENCHING

- A. Conform to specification section 31 23 00.
- B. Excavate trenches with vertical sides uniform bottom, free of deleterious materials, and wide enough for pipes to lay side by side, fully supported on bottom.
  - 1. No lines shall be installed parallel to and directly over another line.
  - 2. When lines must cross, the angle shall be forty-five to ninety degree (45-90°), and a minimum of six (6) inch vertical clearance shall be maintained.
- C. Provide minimum coverage as follows:
  - 1. Pressurized service: 24" in landscape areas, 30" under pavement.

### 3.05 PLACING AND LAYING

- A. General:
  - 1. Lower pipe and accessories into trench by means recommended by the manufacturer.
  - 2. Except where necessary in making connections to other lines, lay pipe with the wide bell end opening facing source.
  - 3. Rest the full length of each section of pipe solidly on the pipe bed, with recesses excavated to

- accommodate wells, couplings, and joints.
- 4. Replace pipe that has been disturbed after laying.
- 5. Do not lay pipe in water, or when trench conditions are unsuitable for the work. De-water trench until jointing is completed.
- 6. Securely close open ends of pipe and valves when work is not in progress.
- 7. Where any part of coating or lining is damaged, repair at no additional cost to the Owner.
- 8. Follow manufacturer's detailed instructions in installing and assembling pipe.

B. Plastic Pipe:

- 1. Position pipe and fittings in trench in a manner that identifying markings will be readily visible for inspection.
- 2. Cutting and joining:
  - a. Protect against abrasion from serrated holding devices.
  - b. Remove burrs and glosses from surfaces to be jointed; use abrasive paper, file, or steel wool.
  - c. Remove dirt, dust, and moisture by wiping clean with dry cloth.
- 3. Align pipe system components without strain.
- 4. Support plastic pipe in trenches with a two (2) inch min. layer of bedding Provide a min. three (3) inch bedding sand cover. Allow no rocks, debris, or potentially damaging substances within six (6) inches of plastic pipe in trenches.

C. Connections:

- 1. Use appropriate fittings to suit the actual condition where connections are made between new work and service points.

### 3.06 JOINTING

A. Other joints:

- 1. Mechanical joints and push-on type joints: Install in accordance with AWWA C600, modified as necessary by the recommendation of the manufacturer to provide for special requirements of specified pipe.
- 2. Make connections between different types of pipe and accessories with transition fittings.
- 3. Rubber gaskets: Handle and install in strict accordance with the recommendations of the manufacturer. Lubricants for gaskets shall be manufactured by or approved by the pipe manufacturer for use under the conditions found in the field.

### 3.07 SETTING VALVES AND VALVE BOXES

A. General:

- 1. Center valve boxes on the valves, setting plumb.
- 2. Tamp earth fill around each valve box to a distance of four feet on all sides, or to be undisturbed trench face if less than four feet.
- 3. Tighten mechanical joints, and fully open and close each valve to assure that all parts are in working condition.

### 3.08 THRUST BLOCKS

A. General:

- 1. Provide and install thrust blocks in accordance with California Building Code requirements and installation guidelines.

### 3.09 TESTING, INSPECTING, AND DISINFECTION

- A. Closing uninspected work: Do not allow or cause any of the work of this Section to be covered up or enclosed until after it has been completely inspected and tested, and has been accepted.

B. Time for making test:

- 1. Except for joint material setting, or where concrete reaction backing necessitates a five day delay, pipelines joints, or couplings may be subjected to hydrostatic pressure, inspected, and

tested for leakage at any time after partial completion of backfill. All testing of water service shall be in accordance with the requirements of AWWA C600 for hydrostatic testing. Contractor to keep records of each piping test, including date and time of test, name of witnessing Owner representative, test pressure, description of piping tested, and remarks (i.e. leaks and repairs made). All tests shall last 4 hours and be tested at 200 psi.

- C. Disinfection:
  - 1. Before acceptance of the potable water system, disinfect each unit of completed service line in accordance with AWWA C601 and criteria of the local governing jurisdiction.
    - a. Proposed method shall be submitted to the Owner's Representative for review and acceptance.
    - b. Perform all tests and disinfection in a manner acceptable to governmental agencies having jurisdiction.
  - 2. Furnish two copies of a Certificate of Compliance to the Owner.

### 3.10 BACKFILLING

- A. General:
  - 1. Backfill only after specified tests have been performed and accepted.
  - 2. Clean trenches of all debris and deleterious material before backfilling.
  - 3. Backfill, as specified or shown in Drawings free from deleterious material.
  - 4. Compact trenching to 95% relative compaction under pavement and 85% relative compaction within planting areas.
  - 5. Trench surfaces shall be flush with finish grade. All trench settling shall be corrected by the contractor at no additional cost to the Owner.
  - 6. Install pipe detection tape and reinforced tracer wire above all pressurized lines.

### 3.11 DEMONSTRATION

- A. Contractor shall instruct Owner's personnel in complete and proper operation of domestic water system per prior to contract closeout.

### 3.12 FINAL REVIEW

- A. Provide Owner's Representative with all Guaranty and record drawing requirements prior to Final Review.

END OF SECTION

SECTION 33 31 00

**SANITARY SEWERAGE**

**PART 1**

**GENERAL**

1.01 SUMMARY

- A. Furnish all labor, materials, equipment, facilities, transportation and services to complete all sanitary sewerage and related work as shown on the Drawings and/or specified herein.
- B. Scope of work: The general extent of the sewerage work is shown on the Drawings and includes, but is necessarily limited to, the following:
  - 1. Sanitary sewerage system installation for drinking fountains and outdoor showers
- C. Related sections can include, but may not be limited to:
  - 1. Section 12 93 00 - Site Furnishings
  - 2. Section 31 20 00 - Earthwork
  - 3. Section 31 23 00 - Excavation, Backfilling and Compaction
  - 4. Section 32 11 00 - Base Courses
  - 5. Section 32 12 16 - Asphaltic Concrete Paving
  - 6. Section 32 13 13 - Portland Cement Concrete
  - 7. Section 33 11 00 - Domestic Water Systems

1.02 REGULATORY REQUIREMENTS AND REFERENCES

- A. California Plumbing Code, current edition
- B. State of California Department of Transportation Standard Specifications, current edition.

1.03 QUALITY ASSURANCE

- A. Control of Work: Conform to Section 5 of the Standard Specifications.
- B. Control of Materials: Conform to Section 6 of the Standard Specifications.

1.04 PROTECTION OF PROJECT SITE

- A. Make provisions to take the necessary precautions to protect existing work from damage during execution of this work.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store pipe neat and orderly stacked and blocked to prevent damage. Cracked, checked, spalled or otherwise damaged pipe shall be removed from site.
- B. Use of chain slings shall not be permitted.
- C. Pipe, fittings, precast sections, cast iron fittings, covers and all other materials shall be carefully handled at all times.
- C. All pipelines and fittings shall be kept clean and closed during construction.

1.06 PROJECT/SITE CONDITIONS

- A. Work of this Section shall not be executed when site conditions are detrimental to quality of work as determined by the Owner's Representative.

- B. PVC pipe shall not be solvent welded during wet conditions.

#### 1.07 SEQUENCING AND SCHEDULING

- A. Refer to all other Contract Documents, determine the extent and character of related work, and properly coordinate work specified herein with that described elsewhere to produce a complete, operational installation.
- B. Contractor shall be solely responsible for coordinating, sequencing, and scheduling all work with all applicable trades and/or sub-contractors so as to insure proper and timely performance.

### **PART 2 PRODUCTS**

#### 2.01 PIPE AND FITTINGS

- A. All pipe and fittings shall be clearly and permanently marked to identify manufacturer, type, class, or schedule and NSF approval as applicable.
- B. Polyvinyl Chloride Pipe (P.V.C.) and fittings: Polyvinyl chloride pipe shall be SDR 26 Bell and Spigot, Type I P.V.C 1120, NSF approved. Comply with ASTM D-3034.
- C. Ductile Iron Pipe (DIP) joints and fittings: Shall be Class 50, rubber gasket push-on type, in compliance with AWWA C-151, C-111 and C-110.
- D. Vitrified Clay Pipe (VCP), and fittings: Shall be extra strength in compliance with ASTM C700, unglazed for socket and spigot joint.

#### 2.02 STRUCTURES

- A. Clean Outs: Shall be as detailed on Drawings. Christy "F8" clean out boxes are acceptable in non-vehicular travel areas. For vehicular travel areas, Christy "G5" clean out boxes shall be used.

#### 2.03 MISCELLANEOUS MATERIALS

- A. Crushed Rock: Shall be ¾" bedding rock as conforming to Section 200.1.2 of the "Standard Specification for Public Works Construction", commonly referred to as the "Greenbook."
- B. Mortar: Conform to all applicable sections of the Standard Specifications. Mixture shall be a 1:2 Portland Cement to sand mixture with a minimum of water.
- C. P.V.C. Solvent Cement: Conform to pipe manufacturer's recommendations.
- D. P.V.C. Primer: Conform to pipe and solvent cement manufacturer's recommendations.
- E. Reinforcing Bars: Refer to Section 32 13 13.
- F. Minor concrete shall conform with Section 32 13 13 and all applicable sections of the Standard Specifications.

### **PART 3 EXECUTION**

#### 3.01 PIPE LAYING

- A. General: The Owner's Representative shall review and accept all pipe prior to installation. Pipe shall be installed in conformance with Section 31 23 00 of these Specifications. All sanitary sewer installations shall be reviewed and accepted by the Owner's Representative prior to backfilling.

- B. Pipe:
  - 1. Pipe shall be laid in trench to specified lines and grades fully and evenly supported layer of bedding material as specified and identified on the Drawings. Excavate bedding as required so bell fittings are clear from soil six inches (6") on each side of joint and to a depth sufficient to avoid contamination of joint. Refer to Drawings for additional information.
  - 2. Pipe shall be laid beginning at the outlet and proceeding with each bell end opening facing upgrade.
  - 3. Cut pipe square and ream to remove burrs prior to use.
  - 4. Connections:
    - a. Thoroughly clean and dry all components to be joined.
    - b. Apply primer and sufficient cement to coat joint surfaces of both components and fill gaps but not in excess.
    - c. Join pipe, wipe off excess cement, and fully support pipe until joint has cured.
- C. Provide sleeving where shown or needed and wherever pipes run through walls using schedule 40 PVC pipe (min. one quarter [1/4] inch diameter larger than pipe) or other acceptable method.

### 3.02 STRUCTURES AT GRADE

- A. General: Set rim or cover elevations to specified grades. Adjust as required to set flush with proposed grades and/or pavement sections.
- B. Clean Outs:
  - 1. Excavate as required.
  - 2. Set on firm unyielding base. Set on compacted select backfill material unless noted otherwise.

### 3.03 SANITARY SEWER CONNECTIONS

- A. Sanitary sewer connections to existing sewer mains shall be made water tight, straight and true to line, grade and "crown to crown" unless noted otherwise.

### 3.04 FIELD QUALITY CONTROL

- A. The Owner's Representative shall review and accept work at the following stages:
  - 1. Excavated trench with bedding in place prior to any pipe being laid
  - 2. Pipe laid prior to backfilling. Any pipe covered prior to acceptance shall be uncovered for review and re-backfilled at contractor's expense.
- B. The Contractor shall furnish the necessary labor, equipment and materials necessary to perform air tests of the completed sewerage project before the system is placed in operation or connected to other lines.
- C. In no case shall the Contractor place the newly constructed sewer in operation without acceptance by the Owner's Representative.

### 3.05 PIPELINE TESTING & FLUSHING

- A. New sections of sanitary sewer main shall be air tested using the following procedures:
  - 1. Test is conducted between two (2) consecutive manholes, or as directed by the Owner's Representative.
  - 2. The test section of the sewer line is plugged at each end. One of the plugs used at the manhole must be tapped and equipped for the air inlet connection for filling the line from the air compressor.
  - 3. Service laterals, stubs and fittings into the sewer test section should be properly capped or plugged and carefully braced against the internal pressure to prevent air leakage by slippage and blowouts.
  - 4. Connect air hose to tapped plug selected for the air inlet. Then connect the other end of the air hose to the portable air control equipment which consists of valves and pressure gauges used to control the air entry rate to the sewer test section, and to monitor the air pressure in

the pipe line. More specifically, the air control equipment includes a shut-off valve, pressure regulating valve, pressure reduction valve and a monitoring pressure gage having a pressure range from 0-5 psi. The gage shall have minimum divisions of .10 psi and an accuracy of .40 psi.

5. Connect another air hose between the air compressor (or other source of compressed air) and the air control equipment. This completes the test equipment set-up. Test operations may commence.
6. Supply air to the test section slowly, filling the pipe line until a constant pressure of 3.5 psi is maintained. The air pressure must be regulated to prevent the pressure inside the pipe from exceeding 5.0 psi.
7. When constant pressure of 3.5 psi is reached, throttle the air supply to maintain the internal pressure above 3.0 psi for at least 5 minutes. This time permits the temperature of the entering air to equalize with the temperature of the pipe wall. During this stabilization period it is advisable to check all capped and plugged fittings with a soap solution to detect any leakage at these connections. If leakage is detected at any cap or plug, release the pressure in the line and tighten all leaky caps and plugs. Then start the test operation again by supplying air. When it is necessary to bleed off the air to tighten or repair a faulty plug, a new five-minute interval must be allowed after the pipe line has been refilled.
8. After the stabilization period, adjust the air pressure to 3.5 psi and shut-off or disconnect the air supply. Observe the gage until the air pressure reaches 3.0 psi. At 3.0 psi commence timing with a stop watch which is allowed to run until the line pressure drops to 2.5 psi at which time the stop watch is stopped. The time required, as shown on the stop watch, for a pressure loss of 0.5 psi is used to compute the air loss.
9. If the time, in minutes and seconds, for the air pressure drop from 3.0 to 2.5 psi is greater than that shown in the following table for the designated pipe size, the section undergoing test shall have passed and shall be presumed to be free of defects. The test may be discontinued at that time.
10. If the time, in minutes and seconds, for the 0.5 psi drop is less than that shown in the following table for the designated pipe size, the section of the pipe shall not have passed the test; therefore, adequate repairs must be made and the line retested.

Requirements for Air Testing:

Pipe size (In inches)	Time	
	Min.	Sec.
4	2	32
6	3	50
8	5	06
10	6	22
12	7	39
14	8	56
15	9	35
16	10	12
18	11	34
20	12	45
21	13	30

(For larger diameter pipe use the following: Minimum time in seconds = 462 x pipe diameter in feet).

11. For eight (8) inch and smaller pipe, only: If, during the five minute saturation period pressure drops less than 0.5 psi after the initial pressurization and air is not added, the pipe section undergoing test shall have passed.
12. Multi-pipe sizes: When the sewer line undergoing test is 8" or large diameter pipe and includes 4" or 6" laterals, the figures in the table for uniform sewer main sizes will not give reliable or accurate criteria for the test. Where multi-pipe sizes are to undergo the air test, compute the average size in inches which is then multiplied by 38.2 seconds. The results will give the minimum time in seconds acceptable for a pressure drop of 0.5 psi for the averaged diameter pipe.



13. Adjustment Required for Groundwater:

- a. An air pressure correction is required when the ground water table is above the sewer line being tested. Under this condition, the air test pressure must be increased .433 psi for each foot the ground water level is above the invert of the pipe.
- b. Where ground water is encountered or is anticipated to be above the sewer pipe before the air testing will be conducted, the following procedure shall be implemented at the time the sewer main and manholes are constructed.
  - 1) Install a pipe nipple (threaded one or both ends, approximately 10" long) through the manhole wall directly on top of one of the sewer pipes entering the manhole with threaded end of nipple extending inside the manhole.
  - 2) Seal pipe nipple with a threaded cap.
  - 3) Immediately before air testing, determine the ground water level by removing the threaded cap from the nipple, blowing air through the pipe nipple to remove any obstructions, and then connecting a clear plastic tube to the pipe nipple.
  - 4) Hold plastic tube vertically permitting water to rise in it to the groundwater level.
  - 5) After water level has stabilized in plastic tube, measure vertical height of water, in feet, above invert of sewer pipe.
  - 6) Determine air pressure correction, which must be added to the 3.0 psi normal starting pressure of test, by dividing the vertical height in feet by 2.31. The result gives the air pressure correction in pounds per square inch to be added.

Example: If the vertical height of water from the sewer invert to the top of the water column measures 11.55 feet, the additional air pressure required would be:

$$(11.55) / (2.31) = 5.0 \text{ psi}$$

Therefore, the starting pressure of the test would be 3.0 plus 5 or 8.0 psi, and the 0.5 lb. drop becomes 7.5 psi. There is no change in the allowable drop (0.5 psi) or in the time requirements established for the basic air test.

- B. After the line has passed the air test, it shall be balled and flushed with water to clean. A metal screen shall be used downstream at the point of connection to the existing system to collect and remove any rock or other debris that is flushed out during cleaning.

END OF SECTION

SECTION 33 40 00

**STORM DRAINAGE**

**PART 1 GENERAL**

1.01 SUMMARY

- A. Furnish all labor, materials, equipment, facilities, transportation and services to complete all storm drainage system improvements and related work as shown on the Drawings and/or specified herein.
- B. Scope of work: The general extent of the drainage work is shown on the Drawings and includes, but is necessarily limited to, the following:
  - 1. Storm drainage system installation
- C. Related sections can include, but may not be limited to:
  - 1. Section 12 93 00 - Site Furnishings
  - 2. Section 31 20 00 - Earthwork
  - 3. Section 31 23 00 - Excavation, Backfilling and Compaction
  - 4. Section 32 11 00 - Base Courses
  - 5. Section 32 12 16 - Asphalt Concrete Paving
  - 6. Section 32 13 13 - Portland Cement Concrete

1.02 REGULATORY REQUIREMENTS AND REFERENCES

- A. State of California Department of Transportation Standard Specifications, Current Edition.
- B. California Building Code, Current Edition.

1.03 SUBMITTALS

- A. Submit cut-sheets or samples of all products to be used in conformance with Submittals and/or applicable Division One and Division Two specifications, General Conditions and Special Provisions.
- B. Record Drawings:
  - 1. Conform to Section 01 78 39 - Project Record Drawings or applicable sections.
  - 2. Accurately record location of new piping, drain structures, and connections to existing systems using horizontal dimensions, elevations, inverts and slope gradients as applicable.

1.04 QUALITY ASSURANCE

- A. Control of Work: Conform to Section 5 of the Standard Specifications.
- B. Control of Materials: Conform to Section 6 of the Standard Specifications.

1.05 PROTECTION OF PROJECT SITE

- A. Make provisions for, and take the necessary precautions to protect existing and new work from damage during entire life of project.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store pipe neatly and orderly, stacked and blocked to prevent damage. Cracked, checked, spalled or otherwise damaged pipe shall be removed from site.
- B. Use of chain slings shall not be permitted.

- C. All piping, fittings and related materials shall be carefully handled at all times.
- D. All pipelines, fittings and drainage structures shall be kept clean and closed during construction.

1.07 PROJECT/SITE CONDITIONS

- A. Work of this section shall not be executed when site conditions are detrimental to quality of work as determined by the Owner's Representative.

1.08 SEQUENCING AND SCHEDULING

- A. Coordinate work of this section with all other work contained in the Contract Documents.

**PART 2 PRODUCTS**

2.01 PIPE AND FITTINGS

- A. All pipe and fittings shall be clearly and permanently marked to identify manufacturer, type, class, or schedule and NSF approval as applicable.
- B. Corrugated High Density Polyethylene (CHDPE) Pipe (Perforated and Solid - Dual Wall)
  - 1. High-density polyethylene perforated corrugated pipe with an integrally formed smooth waterway. Nominal sizes shall have a full circular cross-section, with an outer corrugated pipe wall and an essentially smooth inner wall (waterway). Corrugations may be either annular or spiral. All sizes shall conform to the AASHTO classification "Type S". Pipe manufacturer for this specification shall comply with the requirements for test methods, dimensions, and markings found in AASHTO Designations M252 and M294. Pipe and fittings shall be made from virgin PE compounds which conform with the requirements of cell class 324420C as defined and described in ASTM D 3350.
    - a. The minimum parallel plate stiffness values when tested in accordance with ASTM D2412 shall be as follows:
 

Diameter	Pipe Stiffness
4 inch (100 mm)	50 psi (340 kPa)
6 inch (150 mm)	50 psi (340 kPa)
8 inch (200 mm)	50 psi (340 kPa)
10 inch (250 mm)	50 psi (340 kPa)
12 inch (300 mm)	50 psi (340 kPa)
15 inch (375 mm)	42 psi (290 kPa)
  - 2. The fittings shall not reduce or impair the overall integrity or function of the pipeline. Common corrugated fittings include in-line joint fittings, such as couplers and reducers, and branch or complimentary assembly fittings such as "tees", "wyes", and end caps. These fittings may be installed by various methods, such as snap-on, screw-on, bell and spigot, and wrap around. Couplings shall provide sufficient longitudinal strength to preserve pipe alignment and prevent separation at the joints. Only fittings supplied or recommended by the pipe manufacturer shall be used. Where designated on the plans and as required by the manufacturer, a neoprene or rubber gasket shall be supplied. Installation of the pipe specified above shall be in accordance with ASTM Recommended Practice D2321 as covered elsewhere in these specifications.
  - 3. Corrugated Polyethylene Pipe shall be N-12 drainage pipe as manufactured by Advanced Drainage Systems, Inc. or approved equal.
- C. Flat Panel Pipe: Shall be 12-inch Advantedge as available from ADS, Ph: (510) 913-2211. Contact name is Jim Winslow. All fittings, adaptors, and couplers shall be Advantedge components.

## 2.02 DRAINAGE STRUCTURES (as applicable)

- A. Manholes: Provide frame, cover, grade rings, and all related materials as required by the construction drawings for a four foot diameter manhole. Materials available through Hansen Concrete Products. Ph: (408) 262-1091, Fax (408) 262-0936, or approved equal.
- B. Junction Boxes / Catch Basins:
  - 1. 12-inch shall be CB12 supplied by Central Precast – US Concrete (with ADA lockable round grate), or acceptable equivalent product. Ph: (925) 462-6804.
  - 2. 18-inch basins shall be CB18 as supplied by Central Precast – US Concrete (with lockable round grate), or acceptable equivalent product. Ph: (925) 462-6804. Note that this grate is not ADA compliant and shall not be used in pedestrian hardscape areas.
  - 3. 24-inch basins shall be CB24 as supplied by Central Precast – US Concrete (with ADA lockable round grate), or acceptable equivalent product. Ph: (925) 462-6804..
  - 4. 36-inch basins shall be U43 drain box as supplied by Christy Concrete (H2O loading with ADA lockable grate), or acceptable equivalent product. Christy: ph (800) 486-7070.
  - 5. Grates in paved areas shall have grates that conform to ADA Regulations.
  - 6. All catch basins to have locking mechanism or screw down grate to frame.
  - 7. Provide two grade rings at each catch basin.
  - 8. Junction Boxes are essentially catch basin structures, but with solid cast iron covers.
- C. Extensions: Provide box extensions, junction boxes and grade rings compatible with structures as necessary to finish at the proper elevation and to facilitate future elevation adjustments as noted below.
- D. Clean Outs: Shall be as shown or noted in the Drawings.
- E. French Drain: Shall be as shown or noted in the Drawings.
- F. Drop Inlet: shall be 12" Drain (model #1260) as supplied by NDS (or approved equal). Ph: (800) 726-1998.
- I. Trench Drain:
  - 1. Futsal: Shall be ACO 4000 pre-sloped drain as supplied by ACO Polymer Products, Inc (or acceptable equivalent product). Contact name is Tom Blyndo (209) 572-1511. Contractor to provide appropriate end connections and catch basin with in-line trash bucket and outlet connections. Grate shall be a steel slotted grate . All grates shall comply with ADA requirements.
  - 2. Tennis: Shall be ACO K200 KlassikDrain as supplied by ACO Polymer Products, Inc (or acceptable equivalent product). Contact name is Tom Blyndo (209) 572-1511. Contractor to provide appropriate end connections and catch basin with in-line trash bucket and outlet connections. Use 494Q ADA grate with quick lock locking device. All grates shall comply with ADA requirements
- J. Drinking fountain drain: Zurn 415 flood drain model Z415SH. 8"x8" square drain with cast iron body and bronze grate.
- K. Outdoor shower drain: Zurn 415 flood drain model Z415SH. 8"x8" square drain with cast iron body and bronze grate.

## 2.03 MISCELLANEOUS MATERIALS (as applicable)

- A. Permeable rock beneath synthetic turf area: Refer to Specification Section 32 18 14.
- B. Drainage Rock: Shall be 3/4" inch crushed drain rock or acceptable equal as shown in the drawings, materials available through Stevens Creek Quarry, Cupertino, or TMT Enterprises, San Jose.

- C. Pea Gravel: Shall conform to the following gradation requirements:

U.S. Standard Sieve Mesh	Allowable Range % Retained on Sieve
1/2 inch (12.5 mm)	95% passing
1/4 inch (6.3 mm)	20 – 45% passing
10 mesh (2.0 mm)	No more than 10% passing
18 mesh (1.0 mm)	No more than 5% passing

Material available through Harbor Sand & Gravel, Redwood City, or TMT Enterprises, San Jose.

- D. Sand for all perforated drain pipe applications: Shall be a washed sand that meets USGA Greens Specifications (see below for sieve range) with the following characteristics:
1. 100% passing a #4 screen and no more than 4% passing a #200 screen.
  2. A total silt and clay % of no more than 5%.
  3. Shall be crushed or naturally angled sand – no rounded silica sand.
  4. Pre-approved product and Supplier- G-8 Sand - Brown Sand Co-Tim 209-234-1500 or TMT Enterprises – Matt Moore 408-432-9040. Other acceptable sources are available.

Classification	Sieve Number	Particle Size (mm)	Allowable Range (% Retained on Sieves by weight)
Fine Gravel	10	>2.00	0% to 10%
V. Coarse Sand	18	1.00 – 2.00	
Coarse Sand	35	0.5 – 1.0	82% to 100%
Medium Sand	60	0.25 – 0.5	
Fine Sand	140	0.1 – 0.25	
V. Fine Sand	270	0.05 – 0.1	0% to 8%
Silt & Clay	--	<0.05	

Note: 50% to 75% of particles to be within diameter of 0.25 to 0.75 mm.

- F. Filter Fabric for French Drain: Shall be Mirafi 140N or acceptable equal.
- G. Filter Fabric Fasteners: Metal clip type staple.
- H. Mortar: Shall conform to all applicable sections of the Standard Specifications. Mixture shall be a 1:2 Portland Cement to sand mixture with a minimum of water.
- I. Reinforcing bars: Refer to Section 32 13 13.
- J. Minor concrete: Refer to Section 32 13 13.
- K. Structural Adhesives for Manholes, Catch Basins, and Junction Boxes: Shall be Ramnek or equivalent product. Available thru multiple suppliers.

### PART 3 EXECUTION

#### 3.01 PIPE LAYING

- A. General: Pipe shall be installed per manufacturers' instructions and in conformance with the Contracts Documents.
- B. CHDPE Pipe:

1. Pipe shall be installed with a minimum cover under the H-20 live load = 12 inches to the top of subgrade elevation.
  2. Minimum compaction for pipe subject to H-20 live load is 90% per Section 19, Standard Specifications.
  3. CHDPE pipe shall be laid and jointed in accordance with generally accepted practice and the following provisions to provide the required work.
- C. Flat Panel Piping:
1. Install per the layout indicated on the Drawings and in strict compliance with Manufacturer's written recommended installation instructions. Contractor shall exercise caution to not crush or damage the piping during installation of the permeable rock base.

### 3.02 DRAINAGE STRUCTURES (AS APPLICABLE)

- A. General: Set rim or cover elevations to specified grades utilizing a minimum of two grade rings (or extensions) at top of drainage structure to facilitate potential elevation adjustments in the future.
- B. Catch Basins / Junction Boxes: Install as shown in the Drawings and as follows:
1. Excavate as required.
  2. Set on firm, unyielding base. Set on compacted select backfill material if directed by Owner's Representative.
  3. Prefabricated units not having a bottom shall be set on a poured-in-place concrete slab with smooth trowel finish. Mortar and properly seal unit to slab, making a water tight connection.
  4. Install pipe inlets and outlets to specified elevations. Grout and/or seal all joints to a watertight condition with material per manufacturer's recommendation.
- C. Manholes: Install per manufacturer's recommendations and as shown in the Drawings.
- D. Cleanouts: Install as shown in the Drawings.
- E. Trench Drains: Install as shown in the Drawings and in accordance with the manufacturer's written recommendations.
- F. Drywells, Drinking Fountain Drains, Atrium Drains and Drop Inlets: Install as shown in the Drawings and in accordance with the manufacturer's written recommendations.

### 3.03 FIELD QUALITY CONTROL

- A. The Owner's Representative shall review and accept work at the following stages:
1. Excavated trench with bedding in place prior to any pipe being laid.
  2. Pipe laid prior to backfilling. Any pipe covered prior to review and acceptance shall be uncovered and re-backfilled at contractor's expense.
  3. Drainage device location and pipe connection.
  4. New drainage system shall be flood tested and clean of debris.

END OF SECTION

# END OF PROJECT MANUAL