

**ORGANIC FARM PARKING LOT IMPROVEMENT  
PROJECT MANUAL**

**PROJECT/CONTRACT NUMBER: #17/18-MB4**

**MARIN COMMUNITY COLLEGE DISTRICT**

**August 29, 2017**

**Mandatory Conference/Walk: Tuesday, September 12, 2017 at  
1:00p.m.**

**Location: Fiscal Services, Building 8, Indian Valley Campus,  
Novato, CA 94949**

**Proposal Due Date and Time: Thursday, September 28,  
2017 Received by 11:00 a.m.**

**Location: 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,
2. Bid No. 17/18 MB4, ("Project" or "Contract"):

**Project: ORGANIC FARM PARKING LOT IMPROVEMENT PROJECT**

3. The Project consists of:

Demolition and removal of asphalt pavement, utilities, concrete pavement and landscaping from an existing parking lot.

Installation of new utilities, asphalt pavement, striping, concrete walkways, and landscaping.

4. 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.

5. 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.
6. Contract Documents are available on August 29, 2017, for review at the District Facilities Office. In addition, Contract Documents are available for bidders' review at the following builders' exchanges:
  - A. Marin Builders Exchange
  - B. North Coast Builders Exchange
  - C. District Fiscal Services Website: <http://fiscal.marin.edu/bids>
7. Contract Documents are also available for purchase for One Hundred dollars (\$100.00) at the District Facilities Office. This fee is refundable if the Contract Documents are returned in clean condition back to the District Facilities Office no later than ten (10) calendar days after the date of the bid opening.
8. Sealed Bids will be received until **11:00 a.m., Thursday September 28, 2017**, at the Marin Community College District Indian Valley Campus, District Fiscal Services Office, Bldg. 8, 1800 Ignacio Blvd., 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.

9. 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.
10. 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.
11. A mandatory pre-bid conference and site visit will be held on **Tuesday, September 12, 2017, at 1:00p.m.** Marin Community College District Indian Valley Campus, District Fiscal Services Office, Bldg. 8, 1800 Ignacio Blvd., Novato, California, 94949. All participants are required to sign in. The site visit is expected to take approximately 1 hour. Failure to attend or tardiness will render bid ineligible.
12. 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.
13. 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.
14. 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>.
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 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.
16. The District shall award the Contract, if it awards it at all, to the lowest responsive responsible bidder based on:

The base bid amount only.

The Board reserves the right to reject any and all bids and/or waive any irregularity in any bid received. If the District awards the Contract, the security of unsuccessful bidder(s) shall be returned within sixty (60) days from the time the

award is made. Unless otherwise required by law, no bidder may withdraw its bid for ninety (90) days after the date of the bid opening.

17. The engineers construction estimate for this project is \$600,000

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:

**Organic Farm Parking Lot Improvement**

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 Non-collusion 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. Bid signifies careful examination of Contract Documents and complete understanding of the nature, extent, and location of Work to be performed. Bidders must complete the tasks listed below as a condition to bidding, and submission of a Bid shall constitute the Bidder's express representation to District that Bidder has fully completed the following:
  - a. Bidder has visited the Site, if required, and has examined thoroughly and understood the nature and extent of the Contract Documents, Work, Site, locality, actual conditions, as-built conditions, and all local conditions and federal, state and local laws, and regulations that in any manner may affect cost, progress, performance, or furnishing of Work or that relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto;
  
  - b. Bidder has conducted or obtained and has understood all examinations, investigations, explorations, tests, reports, and studies that pertain to the subsurface conditions, as-built conditions, underground facilities, and all other physical conditions at or contiguous to the Site or otherwise that may affect the cost, progress, performance, or furnishing of Work, as Bidder considers necessary for the performance or furnishing of Work at the Contract Sum, within the Contract Time, and in accordance with the other terms and conditions of Contract Documents, including specifically the provisions of the General Conditions; and no additional examinations, investigations, explorations, tests, reports, studies, or similar information or data are or will be required by Bidder for such purposes;

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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.
15. 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.
16. 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.
17. Addenda may also be issued to modify other parts of the Contract Documents as deemed advisable by the District.
18. 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.
19. Bids shall be based on products and systems specified in Contract Documents or listed by name in Addenda. Whenever in the Specifications any materials, process, or article is indicated or specified by grade, patent, or proprietary name, or by name of manufacturer, that Specification shall be deemed to be followed by the words "or

equal." Bidder may, unless otherwise stated, offer any material, process, or article that shall be substantially equal or better in every respect to that so indicated or specified. The District is not responsible and/or liable in any way for a Contractor's damages and/or claims related, in any way, to that Contractor's basing its bid on any requested substitution that the District has not approved. 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.
20. 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, Marin Community College District 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.
21. Bids will be opened at or after the time indicated for receipt of bids.
22. This Contract may include alternates. Alternates are defined as alternate products, materials, equipment, systems, methods, or major elements of the construction that may, at the District's option and under terms established in the Contract and pursuant to section 20103.8 of the Public Contract Code, be selected for the Work.
23. The District shall award the Contract, if it awards it at all, to the lowest responsive responsible bidder based on the criteria as indicated in the Notice to Bidders. In the event two or more responsible bidders submit identical bids, the District shall select the Bidder to whom to award the Contract by lot.

24. 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.
25. 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.

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- 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.
26. 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.
27. 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.
28. Discrepancies between written words and figures, or words and numerals, will be resolved in favor of numerals or figures.
29. 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**





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:

**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

DOCUMENT 00 41 13

**BID FORM AND PROPOSAL**

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

From: \_\_\_\_\_  
(Proper Name of Bidder)

The undersigned declares that the Contract Documents including, without limitation, the Notice to Bidders and the Instructions to Bidders have been read and agrees and proposes to furnish all necessary labor, materials, and equipment to perform and furnish all work in accordance with the terms and conditions of the Contract Documents, including, without limitation, the Drawings and Specifications of Bid No. 17/18 MB4.

PROJECT: Organic Farm Parking Lot Improvement

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

_____ dollars	\$ _____
<b>BASE BID</b>	

**Alternate #1**

_____ dollars	\$ _____
Additive/Deductive	
<p><b>Scope of Work:</b> Location – Sidewalk coming into the campus at Indian Valley Campus at 1800 Ignacio Blvd, Novato, CA 94949. Approximately 5,500 Sq. Ft. (1,100 linear Feet x 5 Feet wide x 4 Inches thick) sidewalk/concrete to be installed</p> <p><b>Current Conditions:</b> Approximately 2,800 Sq. Ft (560 Linear Feet x 8 Inches thick) of AC pavement/dirt has been removed in existing sidewalk</p> <p><b>Installation/work to be performed:</b> Remove approximately 2,700 Sq. Ft. (540 linear Feet x 5 Feet wide x 8 Inches thick) of AC pavement/dirt and off haul. Fine grade and compact entire area (95%) approximately 5,500 Sq. Ft. for sidewalk. Install 2x4 redwood forms (single sided). Install 5,500 Sq. Ft. x 4" thick ready mix with expansion joints (per City of Novato). Slope sidewalk to curb (1.5%).</p>	

**Alternate #2**

_____ dollars	\$ _____
Additive/Deductive	

1. **Allowance #1.** Repair and/or relocation of undocumented utilities damaged or discovered during site demolition work

- **\$15,000**

The above allowance shall only be allocated for unforeseen items relating to the Work. Contractor shall not bill for or be due any portion of this allowance unless the District has identified specific work, Contractor has submitted a price for that work or the District has proposed a price for that work, the District has accepted the cost for that work, and the District has prepared a change order incorporating that work. Contractor hereby authorizes the District to execute a unilateral deductive change order at or near the end of the Project for all or any portion of the allowance not allocated.

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
- Noncollusion 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 an **A or B** 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, Bidder will execute and deliver to the District within **seven (7)** calendar days after notification of award of the Contract the following documents: (a) the Agreement; (b) Certificates of Insurance evidencing all insurance coverages required under the Contract Documents; (c) the Performance Bond; (d) the Labor and Material Payment Bond; (e) the Certificate of Workers’ Compensation Insurance; and (f) the certifications listed in Section 28 of the Instructions to Bidders. Failure of the Bidder awarded the Contract to strictly comply with the preceding may result in the District’s rescission of the award of the Contract and forfeiture of the Bidder’s Bid Security. In such event, the District may, in its sole and exclusive discretion elect to award the Contract to the responsible Bidder submitting the next lowest Bid Proposal, or to reject all Bid Proposals. In addition, Bidder acknowledges and understands that if it is awarded the Contract, that it shall perform the Work of the Project while complying with all requirements of the Department of Industrial Relations.
12. 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.
13. 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.
14. 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.

- 15. The undersigned Bidder certifies that it is, at the time of bidding, and shall be throughout the period of the contract, licensed by the State of California to do the type of work required under the terms of the Contract Documents and registered as a public works contractor with the Department of Industrial Relations. Bidder further certifies that it is regularly engaged in the general class and type of work called for in the Contract Documents.

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

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_

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

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

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: Organic Farm Parking Lot Improvement

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: Organic Farm Parking Lot Improvement

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.: Organic Farm Parking Lot Improvement – I27-35617 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 46.03

**DRUG-FREE WORKPLACE CERTIFICATION**

PROJECT/CONTRACT NO.: Organic Farm Parking Lot Improvement – I27-35617 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.: Organic Farm Parking Lot Improvement – I27-35617 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 46.06

**LEAD-BASED MATERIALS CERTIFICATION**

PROJECT/CONTRACT NO.: Organic Farm Parking Lot Improvement – I27-35617 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.: Organic Farm Parking Lot Improvement – I27-35617 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.: Organic Farm Parking Lot Improvement – I27-35617 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**

**1.1 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.

**1.2 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.

**1.3 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

#### **1.4 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**

Daniel Park  
Gilbane Building Co  
1800 Ignacio Blvd Building 17  
Novato CA 94949  
Phone 210-596-4083

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

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

I. INTRODUCTIONS:

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

II. PROPOSED CONTRACT: \_\_\_\_\_

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: Organic Farm Parking Lot Improvement ("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 \_\_\_\_\_ None \_\_\_\_\_.

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 27th DAY OF October, 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: ORGANIC FARM PARKING LOT IMPROVEMENT

("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 Sixty Eight (68) consecutive calendar days ("Contract Time") from the date specified in the District's Notice to Proceed. The

start date of the contract shall be October 30<sup>th</sup>, 2017 and the completion date shall be January 5<sup>th</sup>, 2018

**5. Completion-Extension of Time:** Should the Contractor fail to complete this Contract, and the Work provided herein, within the time fixed for completion, due allowance being made for the contingencies provided for herein, the Contractor shall become liable to the District for all loss and damage that the District may suffer on account thereof. The Contractor shall coordinate its work with the Work of all other contractors. The District shall not be liable for delays resulting from Contractor's failure to coordinate its Work with other contractors in a manner that will allow timely completion of Contractor's Work. Contractor shall be liable for delays to other contractors caused by Contractor's failure to coordinate its Work with the work of other contractors.

**6. Liquidated Damages:** Time is of the essence for all work under this Agreement. It is hereby understood and agreed that it is and will be difficult and/or impossible to ascertain and determine the actual damage that the District will sustain in the event of and by reason of Contractor's delay; therefore, Contractor agrees that it shall pay to the District the sum of One Thousand dollars (\$1000.00) 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.

**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. 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).

**16. 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.

**17. Authority to Execute:** The individual(s) executing this Agreement on behalf of the Contractor is/are duly and fully authorized to execute this Agreement on behalf of Contractor and to bind the Contractor to each and every term, condition and covenant of the Contract Documents.

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: Organic Farm Parking Lot Improvement

PROJECT/CONTRACT NO.: Organic Farm Parking Lot Improvement – I27-35617 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 **January 5, 2018**.

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

SAMPLE

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 Contact Code Section 22300**

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

This Escrow Agreement ("Escrow Agreement") is made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between the Marin Community College District ("District"), whose address is \_\_\_\_\_, 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 Organic Farm Parking Lot Improvement Project, in the amount of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) dated, \_\_\_\_\_, 20\_\_\_\_, (the "Contract"); **or**
  - On written request of Contractor, District shall make payments of the retention earnings for the above referenced Contract directly to Escrow Agent.

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

Organic Farm Parking Lot Improvement (Project Name)

("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:

Organic Farm Parking Lot Improvement (Project Name)

("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 \_\_\_\_\_, 20\_\_ by and between the MARIN COMMUNITY COLLEGE DISTRICT ("District") and \_\_\_\_\_ ("Contractor"), whose place of business is \_\_\_\_\_.

RECITALS:

- A. California Public Contract Code section 7100 provides that a public entity is not prohibited from placing in a public works contract and enforcing a contract provision which provides that payment of undisputed contract amounts is contingent upon the contractor furnishing the public entity with a release of all claims against the public entity arising by virtue of the public works contract related to those amounts; provided that disputed contract claims in stated amounts may be specifically excluded by the contractor from the operation of the release.
- B. District and Contractor entered into PROJECT/CONTRACT NO.: \_\_\_\_\_ ("Contract" or "Project") in the County of Marin, California.
- C. The Work under the Contract has been completed and the parties desire to enter into this Agreement and Release as provided in California Public Contract Code section 7100 concerning payment of undisputed contract amounts under the Contract.

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

AGREEMENT

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

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

- 2. Subject to the provisions hereof, District shall forthwith pay to Contractor the undisputed sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) under the Contract, less any amounts represented by any notice to withhold funds on file with District as of the date of such payment.
- 3. Contractor acknowledges and hereby agrees that there are no unresolved or outstanding claims in dispute against District arising from the performance of work

under the Contract, except for the claims described in Paragraph 4 and continuing obligations described in Paragraph 6. It is the intention of the parties in executing this Agreement and Release that this Agreement and Release shall be effective as a full, final and general release of all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities of Contractor against District, all its respective agents, employees, inspectors, assignees and transferees except for the Disputed Claim is set forth in Paragraph 4 and continuing obligations described in Paragraph 6 hereof.

- 4. The following claims submitted under Document 00 72 13 (General Conditions), Article 25, are disputed (hereinafter, the "Disputed Claims") and are specifically excluded from the operation of this Agreement and Release:

Table with 4 columns: Claim No. Submitted, Description of Claim, Amount of Claim, Date Claim. Includes three rows with dollar signs and blank lines for input.

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

- 5. Consistent with California Public Contract Code section 7100, Contractor hereby agrees that, in consideration of the payment set forth in Paragraph 2 hereof, Contractor hereby releases and forever discharges District, all its agents, employees, inspectors, assignees, and transferees from any and all liability, claims, demands, actions, or causes of action of whatever kind or nature arising out of or in any way concerned with the Work under the Contract.
6. Guarantees and warranties for the Work, and any other continuing obligation of Contractor, shall remain in full force and effect as specified in the Contract Documents.
7. 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.
8. 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.

- 9. 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.
- 10. 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 paving, pathways, utilities, lighting and landscaping ("Work" of Contractor) which Contractor installed for the Marin Community College District ("District") for the following project:

PROJECT: Organic Farm Parking Lot Improvement

("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

DOCUMENT 00 72 13

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

**1.1.9. 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
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- 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.** Letter of Assent (if applicable)
- 1.1.11.32.** All Plans, Technical Specifications, and Drawings
- 1.1.11.33.** Any and all addenda to any of the above documents
- 1.1.11.34.** 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. 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.

- 1.1.23. 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.
- 1.1.24. 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.
- 1.1.25. Premises:** The real property owned by the District on which the Site is located.
- 1.1.26. 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.
- 1.1.27. 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.
- 1.1.28. Project:** The planned undertaking as provided for in the Contract Documents.
- 1.1.29. 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.
- 1.1.30. Project Stabilization Agreement** (or "PSA"): 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.
- 1.1.31. 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.
- 1.1.32. 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.
- 1.1.33. Qualified SWPPP Practitioners** ("QSP"): certified personnel that attended a State Water Resources Control Board sponsored or approved training class and passed the qualifying exam.
- 1.1.34. 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.

**1.1.35. 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.

**1.1.36. 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.

**1.1.37. 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").

**1.1.38. 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.

**1.1.39. 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.

**1.1.40. 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.

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

**1.1.42. 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.

**1.1.43. State:** The State of California.

**1.1.44. 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.

**1.1.45. 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.

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

**1.1.47. 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.

**1.1.48. 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/> 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.** [Reserved].

**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 Award (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.



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**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 Construction Change Directive authorized by the District as herein provided. District shall not be liable for the cost of any extra work or any substitutions, changes, additions, omissions, or deviations from the Drawings and Specifications unless the District's governing board has authorized the same and the cost thereof has been approved in writing by Change Order or Construction Change Directive. 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 Construction Change Directive. Contractor shall be responsible for any costs incurred by the District for professional services and DSA

fees and/or delay to the Project Schedule, if any, for DSA to review any request for changes to the DSA approved plans and specifications for the convenience of the Contractor and/or to accommodate the Contractor's means and methods. The provisions of the Contract Documents shall apply to all such changes, additions, and omissions with the same effect as if originally embodied in the Drawings and Specifications.

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

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

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

### **17.5. Force Account Directives**

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

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

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

**17.5.4.** The Contractor shall be responsible for all cost related to the administration of Force Account Directive. The markup for overhead and profit for Contractor modifications shall be full compensation to the Contractor to administer Force Account Directive.

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

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

	<b><u>WORK PERFORMED OTHER THAN BY CONTRACTOR</u></b>	<b><u>ADD</u></b>	<b><u>DEDUCT</u></b>
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(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

**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 Construction Change 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 Construction Change Directives issued to Subcontractors by the Contractor to the extent as required by the Contract Documents.

**17.17. Alteration to Change Order Language**

Contractor shall not alter Change Orders or reserve time in Change Orders. 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.

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**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 00 65 19.26, "AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS" from the Contractor.

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

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

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

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

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

**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 Construction Change Directive, or invoice the Contractor for the cost of that work. Contractor shall pay any invoices within thirty (30) days of receipt of same or District may withhold those amounts from payment(s) to Contractor.

## **24. TERMINATION AND SUSPENSION**

### **24.1. District's 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 of 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.** [Reserved].

**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. 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.

**25.8.1.7.** District’s rights to seek provisional equitable remedies, including temporary retraining orders or preliminary injunctive relief.

**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. 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.

**2.3. Maintaining Utilities.** The Contractor shall maintain in operation during duration of Contract, drainage lines, storm drains, sewers, water, gas, electrical, steam, and other utility service lines within working area.

**2.4. Confidentiality.** Contractor shall maintain the confidentiality of all information, documents, programs, procedures and all other items that Contractor encounters while performing the Work. This requirement shall be ongoing and shall survive the expiration or termination of this Contract and specifically includes, without limitation, all student, parent, and employee disciplinary information and health information.

**2.5. 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.

**2.6. 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 ten (10) days prior to bid opening as indicated in the Instructions to Bidders.

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

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

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

**5. Insurance Policy Limits**

All of Contractor’s insurance shall be with insurance companies with an A.M. Best rating of no less than A: VII The limits of insurance shall not be less than:

<b>Commercial General Liability</b>	Product Liability and Completed Operations, Fire Damage Liability – Split Limit	\$1,000,000 Per occurrence;  \$2,000,000 aggregate
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**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. 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.

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

**6.2.1.** Contractor acknowledges that all California community college districts are obligated to develop and implement the following requirements for the discharge of storm water to surface waters from its construction and land disturbance activities (storm water requirements), without limitation:

**6.2.1.1.** Municipal Separate Storm Sewer System (MS4) is 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.

**6.2.1.2.** Storm Water Pollution Prevention Plan (SWPPP) contains specific best management practices (BMPs) and establishes numeric effluent limitations at:

**6.2.1.2.1.** Sites where the District engages in maintenance (e.g., fueling, cleaning, repairing) for transportation activities.

**6.2.1.2.2.** Construction sites where:

**6.2.1.2.2.1.** One (1) or more acres of soil will be disturbed, or

**6.2.1.2.2.2.** The project is part of a larger common plan of development that disturbs more than one (1) acre of soil.

**6.2.2.** 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.

**6.2.3.** At no additional cost to the District, Contractor shall provide a Qualified Storm Water Practitioner who shall be onsite and implement and monitor any and all SWPPP requirements applicable to the Project, including but not limited to:

**6.2.3.1.** At least forty eight (48) hours prior to a forecasted rain event, implementing the Rain Event Action Plan (REAP) for any rain event requiring implementation of the REAP, including any erosion and sediment control measures needed to protect all exposed portions of the site; and

**6.2.3.2.** Monitoring any Numeric Action Levels (NALs), if applicable.

**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 in 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 am and 7:00 pm on weekdays and Saturdays. Work on Sundays and holidays will be upon request and acceptance of the Marin Community College 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**

**1.1 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.

**1.2 SUMMARY OF WORK COVERED BY CONTRACT DOCUMENTS**

- A. The Work of this Contract may consist of the following:

Demolition of asphalt pavement, concrete walkways and curbs, utilities and landscaping to the existing parking lot.  
Grading for ADA accessible pathway and stairs and bio-retention swale.  
Installation of concrete ADA accessible pathway, stairs, utilities, lighting, striping and landscaping.

**1.3 CONTRACTS**

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

**1.4 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.

**1.5 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.

**1.6 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.

**1.7 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.

**1.8 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.

**1.9 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**

**1.1 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.

**1.2 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.

**1.3 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.

**1.4 BASE BID**

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

**1.5 ALTERNATES**

- A. None.**

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**

**2.1 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.

**2.2 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**

**1.1 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.

**1.2 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. <u>Fringe Benefits:</u>			
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 sales tax)	\$ _____
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 (NOTUSED)**

**END OF SECTION**

**SECTION 01 29 00****APPLICATIONS AND CERTIFICATIONS FOR PAYMENT****PART 1 - GENERAL****1.1 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.

**1.2 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.

**1.3 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.****1.4 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.****1.5 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

## 1.6 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.

## 1.7 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**

**1.1 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.

**1.2 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.

**1.3 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.

**1.4 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.

**1.5 MEP COORDINATION MEETINGS**

- A. To be held by the Contractor as necessary to maintain work flow and adherence to contractor's schedule.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

END OF DOCUMENT

DOCUMENT 01 32 00

**PROJECT CONSTRUCTION SCHEDULE**

**PART I – GENERAL**

**1.1 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.

**1.2 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.

**1.3 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:

<b><u>ACTIVITY DESCRIPTION</u></b>	<b><u>REQUIRED COMPLETION</u></b>
<b>CONSTRUCTION STARTS</b>	<b>October 30, 2017</b>
<b>FINAL PROJECT COMPLETION</b>	<b>January 5, 2018</b>

**1.4 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 ( $\frac{3}{4}$ ) of the Total Bid Price of this Project. The written statement shall provide contact persons for referenced projects with current telephone and address information.
- B. District reserves the right to approve or reject Contractor's scheduler or consultant at any time. District reserves the right to refuse replacing Contractor's scheduler or consultant, if District believes replacement will negatively affect the scheduling of Work under this Contract.

**1.5 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.

**1.6 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.

**1.7 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.

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- (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.

### **1.8 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.

### **1.9 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**

**1.1 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.

**1.2 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..

### **1.3 SHOP DRAWINGS:**

- A. Contractor shall submit one reproducible transparency and six (6) opaque reproductions. The District will review and return the reproducible copy and one (1) opaque reproduction to Contractor.
- B. Before commencing installation of any Work, the Contractor shall submit and receive approval of all drawings, descriptive data, and material list(s) as required to accomplish Work.
- C. Review of Shop Drawings is regarded as a service to assist Contractor and in all cases original Contract Documents shall take precedence as outlined under General Conditions.
- D. No claim for extra time or payment shall be based on work shown on Shop Drawings unless the claim is (1) noted on Contractor's transmittal letter accompanying Shop Drawings and (2) Contractor has complied with all applicable provisions of the General Conditions, including, without limitation, provisions regarding changes and payment, and all required written approvals.
- E. District shall not review Shop Drawings for quantities of materials or number of items supplied.
- F. District's and/or Architect's review of Shop Drawing will be general. District and/or Architect review does not relieve Contractor of responsibility for 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.

- 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.

#### **1.4 PRODUCT DATA OR NON REPRODUCIBLE SUBMITTALS:**

- A. Contractor shall submit manufacturer's printed literature in original form. Any fading type of reproduction will not be accepted. Contractor must submit a minimum of six (6) each, to the District. District shall return one (1) to the Contractor, who shall reproduce whatever additional copies it requires for distribution.
- B. Contractor shall submit six (6) copies of a complete list of all major items of mechanical, plumbing, and electrical equipment and materials in accordance with the approved Submittal Schedule, except as required earlier to comply with the approved Construction Schedule. Other items specified are to be submitted prior to commencing Work. Contractor shall submit items of like kind at one time in a neat and orderly manner. Partial lists will not be acceptable.
- C. Submittals shall include manufacturer's specifications, physical dimensions, and ratings of all equipment. Contractor shall furnish performance curves for all pumps and fans. Where printed literature describes items in addition to that item being submitted, submitted item shall be clearly marked on sheet and superfluous information shall be crossed out. If highlighting is used, Contractor shall mark all copies.
- D. Equipment submittals shall be complete and include space requirements, weight, electrical and mechanical requirements, performance data, and supplemental information that may be requested.

#### **1.5 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.

## **1.6 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**

**1.1 RELATED DOCUMENTS AND PROVISIONS:**

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

- A. General Conditions, including without limitation, Site Access, Conditions, and Regulations;
- B. Special Conditions;
- C. Drug-Free Workplace Certification;
- D. Tobacco-Free Environment Certification;
- E. Criminal Background Investigation/Fingerprinting Certification;
- F. Temporary Facilities and Controls.

**1.2 REQUIREMENTS OF THE DISTRICT:**

- A. Drug-Free Schools and Safety Requirements:
  - (1) All school sites and other District Facilities have been declared "Drug-Free Zones." No drugs, alcohol and/or smoking are allowed at any time in any buildings and/or grounds on District property. No students, staff, visitors, or contractors are to use drugs on these sites.
  - (2) Smoking and the use of tobacco products by all persons is prohibited on or in District property. District property includes school buildings, school grounds, school owned vehicles, 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.
- 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**

**1.1 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.

**1.2 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.

**1.3 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**

**1.1 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.

**1.2 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 Washington, DC 20001	202/452.7100

	<a href="http://www.steel.org">www.steel.org</a>	
AITC	American Institute of Timber Construction 7012 S. Revere Parkway Suite 140 Centennial, CO 80112 <a href="http://www.aitc-glulam.org">www.aitc-glulam.org</a>	303/792.9559
ALI	Associated Laboratories, Inc. P.O. Box 152837 Dallas, TX 75315 <a href="http://www.assoc-labs.com">www.assoc-labs.com</a>	214/565-0593
ALSC	American Lumber Standards Committee, Inc. P.O. Box 210 Germantown, MD 20875 <a href="http://www.alsc.org">www.alsc.org</a>	301/972-1700
AMCA	Air Movement and Control Association International, Inc. 30 W. University Drive Arlington Heights, IL 60004 <a href="http://www.amca.org">www.amca.org</a>	847/394-0150
ANLA	American Nursery & Landscape Association 1200 G Street NW, Suite 800 Washington, DC 20005 <a href="http://www.anla.org">www.anla.org</a>	202/789-2900
ANSI	American National Standards Institute 1899 L Street, NW, 11th Floor Washington, DC, 20036 <a href="http://www.ansi.org">www.ansi.org</a>	202/293.8020
APA	APA-The Engineered Wood Association 7011 S. 19th Street Tacoma, WA 98466-5333 <a href="http://www.apawood.org">www.apawood.org</a>	253/565-6600
APA	Architectural Precast Association 6710 Winkler Road, Suite 8 Fort Myers, Florida 33919 <a href="http://www.archprecast.org">www.archprecast.org</a>	239/454-6989
ARI	Air Conditioning and Refrigeration Institute 4100 N. Fairfax Drive, Suite 200 Arlington, VA 22203 <a href="http://www.lightindustries.com/ARI">www.lightindustries.com/ARI</a>	703/524-8800
ARMA	Asphalt Roofing Manufacturers Association Public Information Department 750 National Press Building 529 14th Street, NW Washington, DC 20045 <a href="http://www.asphaltroofing.org">www.asphaltroofing.org</a>	202/591-2450

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	703/538-1600

	<a href="http://www.awci.org">www.awci.org</a>	
AWPA	American Wood Protection Association P.O. Box 361784 Birmingham, AL 35236-1784 <a href="http://www.awpa.com">www.awpa.com</a>	205/733-4077
AWPI	American Wood Preservers Institute 2750 Prosperity Ave. Suite 550 Fairfax, VA 22031-4312 <a href="http://www.arcat.com">www.arcat.com</a>	800/356-AWPI 703/204-0500
AWS	American Welding Society 8669 Doral Boulevard, Suite 130 Doral, Florida 33166 <a href="http://www.aws.org">www.aws.org</a>	800/443-9353 305/443-9353
AWI	Architectural Woodwork Institute 46179 Westlake Drive, Suite 120 Potomac Falls, VA 20165-5874 <a href="http://www.awinet.org">www.awinet.org</a>	571/323-3636
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235 <a href="http://www.awwa.org">www.awwa.org</a>	800/926-7337 303/794 7711
BHMA	Builders Hardware Manufacturers Association 355 Lexington Avenue, 15th floor New York, NY 10017 <a href="http://www.buildershardware.com">www.buildershardware.com</a>	212/297-2122
BIA	The Brick Industry Association 1850 Centennial Park Drive, Suite 301 Reston, VA 20191 <a href="http://www.gobrick.com">www.gobrick.com</a>	703/620-0010
CGA	Compressed Gas Association 14501 George Carter Way, Suite 103 Chantilly VA 20151-2923 <a href="http://www.cganet.com">www.cganet.com</a>	703/788-2700
CISCA	Ceilings & Interior Systems Construction Association 1010 Jorie Blvd, Suite 30 Oak Brook, IL 60523 <a href="http://www.cisca.org">www.cisca.org</a>	630/584-1919
CISPI	Cast Iron Soil Pipe Institute 1064 Delaware Avenue SE Atlanta, GA 30316 <a href="http://www.cispi.org">www.cispi.org</a>	404/622-0073
CLFMI	Chain Link Fence Manufacturers Institute	410/290-6267

	10015 Old Columbia Road, Suite B-215 Columbia, MD 21046 <a href="http://www.associationsites.com/main-pub.cfm?usr=clfma">www.associationsites.com/main-pub.cfm?usr=clfma</a>	
CPA	Composite Panel Association 19465 Deerfield Avenue, Suite 306 Leesburg, VA 20176 <a href="http://www.compositepanel.org">www.compositepanel.org</a>	703/724-1128
CPSC	Consumer Product Safety Commission 4330 East West Highway Bethesda, MD 20814 <a href="http://www.cpsc.gov">www.cpsc.gov</a>	301/504-7923 800/638-2772
CRA	California Redwood Association 405 Enfrente Drive, Suite 200 Novato, CA 94949 <a href="http://www.calredwood.org">www.calredwood.org</a>	415/382-0662
CRI	Carpet and Rug Institute P.O. Box 2048 Dalton, Georgia 30722-2048 <a href="http://www.carpet-rug.org">www.carpet-rug.org</a>	706/278-3176
CRSI	Concrete Reinforcing Steel Institute 933 N. Plum Grove Road Schaumburg, IL 60173 4758 <a href="http://www.crsi.org">www.crsi.org</a>	847/517-1200
CSI	The Construction Specifications Institute 110 South Union Street, Suite 100 Alexandria VA 22314 <a href="http://www.csinet.org">www.csinet.org</a>	800/689-2900
CTIOA	Ceramic Tile Institute of America 12061 Jefferson Blvd. Culver City, CA 90230-6219 <a href="http://www.ctioa.org">www.ctioa.org</a>	310/574-7800
DHI	Door and Hardware Institute (formerly National Builders Hardware Association) 14150 Newbrook Dr. Chantilly, VA 20151 <a href="http://www.dhi.org">www.dhi.org</a>	703/222-2010
DIPRA	Ductile Iron Pipe Research Association 2000 2nd Avenue, South Suite 429 Birmingham, AL 35233 <a href="http://www.dipra.org">www.dipra.org</a>	205/402-8700
DOC	U.S. Department of Commerce 1401 Constitution Ave., NW Washington, D.C. 20230	202/482-2000



	<a href="http://www.commerce.gov">www.commerce.gov</a>	
DOT	U.S. Department of Transportation 1200 New Jersey Avenue, SE Washington, DC 20590 <a href="http://www.dot.gov">www.dot.gov</a>	855/368-4200
EJMA	Expansion Joint Manufacturers Association, Inc. 25 North Broadway Tarrytown, NY 10591 <a href="http://www.ejma.org">www.ejma.org</a>	914/332-0040
EPA	Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N.W. Washington, DC 20460 <a href="http://www.epa.gov">www.epa.gov</a>	202/272-0167
FCICA	Floor Covering Installation Contractors Association 7439 Millwood Drive West Bloomfield, MI 48322 <a href="http://www.fcica.com">www.fcica.com</a>	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 <a href="http://www.fmglobal.com">www.fmglobal.com</a>	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 <a href="http://www.gsa.gov">www.gsa.gov</a>	202/619-8925
GA	The Gypsum Association 6525 Belcrest Road, Suite 480 Hyattsville, MD 20782 <a href="http://www.gypsum.org">www.gypsum.org</a>	301/277-8686
GANA	Glass Association of North America 800 SW Jackson St., Suite 1500 Topeka, KS 66612-1200 <a href="http://www.glasswebsite.com">www.glasswebsite.com</a>	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 www.hpva.org	703/435-2900
IAPMO	International Association of Plumbing and Mechanical Officials (formerly the Western Plumbing Officials Association) 4755 E. Philadelphia St. Ontario, CA 91761 www.iapmo.org	909/472-4100
ICC	International Code Council 500 New Jersey Avenue, NW, 6th Floor Washington, DC 20001 www.iccsafe.org	888/422-7233
IEEE	Institute of Electrical and Electronics Engineers 3 Park Avenue, 17th Floor New York, NY 10016-5997 www.ieee.org	212/419-7900
IES	Illuminating Engineering Society 120 Wall Street, Floor 17 New York, NY 10005-4001 www.ies.org	212/248-5000
ITRK	Intertek Testing Services 3933 US Route 11 Cortland, NY 13045 www.intertek.com	607/753-6711
MCAA	Mechanical Contractors Association of America 1385 Piccard Drive Rockville, MD 20850 www.mcaa.org	301/869-5800
MIA	Marble Institute of America 28901 Clemens Rd, Ste 100 Cleveland, OH 44145 www.marble-institute.com	440/250-9222
MMPA (formerly WMMPA)	Moulding & Millwork Producers Association (formerly Wood Moulding & Millwork Producers Association) 507 First Street Woodland, CA 95695 www.wmmpa.com	530/661-9591 800/550-7889

MSS	Manufacturers Standardization Society (MSS) of the Valve and Fittings Industry 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 200 W. Adams St. #2100	312/786-0300

	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 500 East Yale Loop Irvine, CA 92614	949/387.7611

	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	972/243-3902

	<a href="http://www.uni-bell.org">www.uni-bell.org</a>	
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 Portland, OR 97204-2122 <a href="http://www2.wwpa.org">www2.wwpa.org</a>	503/224-3930

**PART 2 - PRODUCTS** Not Used.

**PART 3 - EXECUTION** Not Used.

END OF DOCUMENT



DOCUMENT 01 43 00

**MATERIALS AND EQUIPMENT**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS AND PROVISIONS**

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

- A. General Conditions, including, without limitation, Purchase of Materials and Equipment;
- B. Special Conditions;
- C. Imported Materials Certification.

**1.2 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.

**1.3 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.

**1.4 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**

### **2.1 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.

### **2.2 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.

### **2.3 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****3.1 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.

**3.2 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.

**3.3 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.

**3.4 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.

### **3.5 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****1.1 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.

**1.2 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.

**1.3 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.

#### **1.4 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.

### **1.5 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.

#### **1.6 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.

## **1.7 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**

### **2.1 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**

**1.1 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.

**1.2 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.

### **1.3 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.

### **1.4 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.

### **1.5 SECURITY:**

The Contractor shall be responsible for project security for materials, tools, equipment, supplies, and completed and partially completed Work.

### **1.6 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.

**1.7 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.

**1.8 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**

**1.1 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.

**1.2 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.

**1.3 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.

**1.4 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.

**1.5 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.

### **1.6 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.

### **1.7 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**

**3.1 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.

### **3.2 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.

### **3.3 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**

**1.1 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.

**1.2 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.

**1.3 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.

**1.4 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**

**1.1 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.

**1.2 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.

**1.3 QUALIFICATIONS OF SURVEYOR OR ENGINEERS:**

Contractor shall only use a qualified licensed engineer or registered land surveyor, to whom District makes no objection.

**1.4 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.

**1.5 RECORDS:**

Contractor shall maintain a complete, accurate log of all control and survey work as it progresses.

**1.6 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**

**3.1 COMPLIANCE WITH LAWS:**

Contractor is responsible for meeting all applicable codes, OSHA, safety and shoring requirements.

**3.2 NONCONFORMING WORK:**

Contractor is responsible for any re-surveying required by correction of nonconforming work.

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.

**1.2 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.

### **1.3 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.

#### **1.4 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.

#### **1.5 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**

#### **2.1 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**

#### **3.1 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.

**3.2 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.

**3.3 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**

**1.1 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**

**2.1 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**

**3.1 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.

**3.2 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.

### **3.3 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.

### **3.4 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.

### **3.5 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.

**3.6 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.

**3.7 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.

**3.8 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.

**3.9 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**

**1.1 RELATED DOCUMENTS AND PROVISIONS**

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

- A. General Conditions, including, without limitation, Completion of Work;
- B. Special Conditions;
- C. Temporary Facilities and Controls.

**1.2 CLOSEOUT PROCEDURES**

Contractor shall comply with all closeout provisions as indicated in the General Conditions.

**1.3 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, 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.

**1.4 ADJUSTING**

Contractor shall adjust operating products and equipment to ensure smooth and unhindered operation.

**1.5 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.

#### **1.6 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.

#### **1.7 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****1.1 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.

**1.2 QUALITY ASSURANCE:**

Contractor shall prepare instructions and data by personnel experienced in maintenance and operation of described products.

**1.3 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.

**1.4 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.

#### **1.5 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.

#### **1.6 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.

### **1.8 SUBMITTAL:**

- A. Contractor shall submit to the District for review two (2) copies or 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 two (2) 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 two (2) 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

**WARRANTIES****PART 1 - GENERAL****1.1 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.

**1.2 FORMAT**

- A. Binders: Contractor shall use commercial quality, 8-1/2 by 11 inch, three-side rings, with durable plastic covers; two inch maximum ring size.
- B. Cover: Contractor shall identify each binder with typed or printed title "WARRANTIES" and shall list title of Project.
- C. Table of Contents: Contractor shall provide title of Project; name, address, and telephone number of Contractor and equipment supplier, and name of responsible principal. Contractor shall identify each item with the number and title of the specific Specification, document, provision, or section in which the name of the product or work item is specified.
- D. Contractor shall separate each warranty with index tab sheets keyed to the Table of Contents listing, providing full information and using separate typed sheets as necessary. Contractor shall list each applicable and/or responsible Subcontractor(s), supplier(s), and/or manufacturer(s), with name, address, and telephone number of each responsible principal(s).

**1.3 PREPARATION:**

- A. Contractor shall obtain warranties, executed in duplicate by each applicable and/or responsible subcontractor(s), supplier(s), and manufacturer(s), within ten (10) days after completion of the applicable item or work. Except for items put into use with District's permission, Contractor shall leave date of beginning of time of warranty 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.

**1.4 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 two (2) 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 two (2) 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**

**1.1 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**

**2.1 GENERAL:**

- A. As indicated in the Contract Documents, the District will provide Contractor with one set of reproducible (mylars) 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, Construction Claim Directives, RFI's, and Addenda, shall be accurately and legibly recorded by Contractor.
- E. Locations and changes shall be done by Contractor in a neat and legible manner and, where applicable, indicated by drawing a "cloud" around the changed or additional information.

**2.2 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**

#### **4.1 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) 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) copy and one (1) electronic pdf format 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 02 40 00

### DEMOLITION

#### PART 1 - GENERAL

##### 1.1 SECTION INCLUDES

- A. Specifications for the demolition and removal of structures, including backfilling of resultant excavations and depressions, as indicated.
- B. Extent of demolition work shall be as follows:
  - 1. Buildings and structure foundations, footings, and foundation systems shall be completely removed to the base of the foundation.
  - 2. Utility services to facilities to be removed or demolished shall be disconnected, cut, and capped.
- C. Restoration of existing structures and facilities to remain in place which are damaged by demolition and removal operations.

##### 1.2 RELATED SECTIONS

- A. Section 31 10 00 - Site Clearing
- B. Section 01 50 00 - Temporary Facilities and Controls

##### 1.3 REFERENCES

- A. American National Standards Institute (ANSI)  
ANSI A10.6 Safety Requirements for Demolition Operations
- B. California Code of Regulations (CCR)  
CCR Title 8, Chapter 4, Subchapter 4 – Construction Safety Orders  
CCR Title 24, Part 2, California Building Code, Chapter 33, Section 3303, Protection of Pedestrians during Construction or Demolition

##### 1.4 PERMITS

- A. Obtain all special permits and licenses and give all notices required for performance and completion of the demolition and removal work, hauling, and disposal of debris.

##### 1.5 SUBMITTALS

- A. Demolition Plan
  - 1. Submit a comprehensive demolition plan, describing the proposed sequence, methods, and equipment for demolition, removal, and disposal of structure(s); include salvage if required. Do not proceed with demolition until the designated approval authority has approved the demolition plan.

- B. Shop Drawings
1. Include drawings in plan of all structures to be demolished. Indicate stages or phases of the demolition work.
- C. Permits
1. Submit copies of demolition, hauling, and debris disposal permits and notices for record purposes. Include description of proposed haul routes.

## 1.6 WASTE DISPOSAL AND RECYCLING

- A. The District has implemented strict recycling and waste management policies for all waste materials removed from his property as a result of construction and demolition activity. These include:
- Asphalt
  - Concrete, concrete block, concrete masonry units (CMU), slump stone (decorative concrete block), and rocks
  - Asphalt Concrete
  - Brick
  - Paper, including bond, newsprint, cardboard, mixed paper, packing materials, and packaging
  - Cement Fiber Products, including shingles, panels, siding
  - Paint
  - Rigid Foam
  - Glass
  - Plastics
  - Carpet and Pad
  - Beverage Containers
  - Insulation
  - Gypsum Wallboard
  - Porcelain Plumbing Fixtures
  - Fluorescent Light Tubes, per local Sanitary Service regulations
  - Green materials (i.e., tree trimmings and land clearing debris)
  - Metals including, but not limited to, stud trim, ductwork, piping, reinforcing steel (rebar), roofing, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze (ferrous and non-ferrous)
  - Soils
  - Wood, including clean dimensional wood, pallet wood, plywood, oriented strand board (OSB), particleboard
- B. The goal of this program is to earn credits towards “LEED Certification” by meeting or exceeding credit’s technical requirements. Regarding Section 02 40 00, the “Material and Resources” section of the LEED Rating System (latest version -- US Green Building Council) shall be followed.
- C. The successful bidder will be required to account for all waste materials removed from the Project, and to recycle, salvage, or reuse, to the maximum practicable extent, all of the materials listed above. If the successful bidder believes that recycling, salvage, or reuse of any of these materials is impracticable, the bidder must so inform the District before initiation of the Project, and secure District’s written authorization for an alternative method of disposal.

- D. The successful bidder will be required to develop and maintain a plan which documents procedures to recycle, salvage, or reuse the materials listed above, including separation and recycling procedures and markets for each material recovered. This plan must also address training and communications, recordkeeping, and reporting requirements to assure that all waste materials are accounted for. As the project proceeds, this plan is to be updated with the quantities of each waste that are actually reused salvaged, recycled, or disposed of, and the markets to which these materials are directed, so that it provides documentation in a single source of waste management performance on the Project.
- E. The District retains the right to inspect, and subsequently approve or disapprove any and all recycling end markets, reuse or salvage outlets, and/or waste disposal facilities that are involved in the receipt of recyclables and/or waste materials generated from the Project. Disapproval of such a market or outlet may be based on past or current violations of federal or state environmental, health, or safety laws, improper disposal activities, risk or liability exposure, or any other reason deemed sufficient by the District.
- F. The successful bidder shall maintain records for each type of material removed from the job site (including materials that are not recycled), provided the name(s) of specific end destinations for all materials removed (whether recycled or disposed of), and provide weights and measures of all materials removed. Every load of waste material must be weighed and these scale weights must be reported to the District on a monthly basis, retailing material types and net weights. The District retains the right to certify weights of sample loads of materials leaving the project site, and compare these to the weights submitted by the successful bidder. The District retains the right to request copies of original scale tickets for any and all materials removed from the Project up to two (2) years following the project completion.

## 1.7 SITE CONDITIONS

- A. Erect and maintain temporary bracing, shoring, lights, barricades, signs, and other measures as necessary to protect the public, workers, and adjoining property from damage from demolition work, all in accordance with applicable codes and regulations.
- B. Open depressions and excavations occurring as part of this work shall be barricaded and posted with warning lights when accessible through adjacent property or through public access. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
- C. Protect utilities, pavements, and facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by demolition operations.
- D. Protection of Utilities: Protect active sewer, water, gas, electric, and other utilities; and drainage and irrigation lines indicated or, when not indicated, found or otherwise made known to the Contractor before or during demolition work.
- E. Maintain existing utilities and protect from damage as necessary to satisfy the requirements of jurisdictional utility companies and related codes and regulations.
- F. Make arrangements with affected utility companies and Districts to provide the information and services necessary to coordinate and complete the Work.
- G. Do not disconnect or shut down any part of the existing utilities and services, except by permission of authorities having jurisdiction. Submit schedule of estimated shut-down

time in order to obtain such permission, and notify all interested parties, neighbors, utilities, and municipal and county authorities, as required.

- H. Utilities to be removed shall not be removed until shut-down time can be kept to a minimum. Do not remove an existing utility line or service until the replacement line, crossover, or capping is ready to be performed.
- I. Notify the Engineer and utility Districts 72 hours before performing any excavation work. Notify affected utilities by calling Underground Service Alert (USA) at 1-800-227-2600. Contact utility Districts not covered by USA, by calling the affected utility Districts directly.
- J. Protect active underground utilities from damage. If underground utilities are damaged in any way, notify the Engineer and affected utilities immediately for corrective action.
- K. Noise and Dust Abatement: Comply with requirements specified in Section 01 50 00 - Temporary Facilities and Controls. In addition, provide continuous noise and dust abatement as required to prevent disturbance and nuisance to the public and workers and to the occupants of adjacent premises and surrounding areas. Dampen or cover areas affected by demolition operations as necessary to prevent dust nuisance.
- L. The Contract Drawings and related documents may not represent all surface conditions at the site and adjoining areas. The known surface conditions are as indicated, and shall be compared with actual conditions before commencement of work.
- M. Existing utilities and drainage systems below grade are located from existing documents and from surface facilities such as manholes, valve boxes, area drains, and other such surface fixtures.
- N. If existing active services encountered are not indicated or otherwise made known to the Contractor and interfere with the permanent facilities under construction, notify the Engineer in writing, requesting instructions on their disposition. Take immediate steps to ensure that the service provided is not interrupted, and do not proceed with the work until written instructions are received from the Engineer.
- O. Thicknesses of existing pavements are from previous construction documents, and do not imply the actual depth or thickness of the total pavement or base material, where it occurs. Remove pavement of whatever thickness as required.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS, EQUIPMENT, AND FACILITIES**

- A. Furnish all materials, tools, equipment, devices, appurtenances, facilities, and services as required for performing the demolition and removal work.

## **PART 3 - EXECUTION**

### **3.1 PRESERVATION OF REFERENCE MARKERS**

- A. Record the locations and designation of survey markers and monuments prior to their removal. Provide three reference points for each survey marker and monument removed, established by a licensed civil engineer or land surveyor currently registered in the State of California.



- B. Store removed markers and monuments during demolition work, and replace them upon completion of the work. Re-establish survey markers and monuments in conformance with the recorded reference points. Forward to the Engineer a letter verifying re-establishment of survey markers and monuments, signed by a licensed civil engineer or land surveyor currently registered in the State of California.

### **3.2 DEMOLITION**

- A. Perform demolition in accordance with the approved Demolition Plan.
- B. Operational procedures shall be in accordance with the approved Demolition Plan.
- C. Demolish concrete and masonry in small sections. Perform demolition with small tools as much as possible. Blasting will not be permitted.
- D. Cap or plug sanitary sewer in accordance with the utility District's standard details and instructions. Cap and plug pipe and other conduits abandoned due to demolition, with approved type caps and plugs as required by the utility Districts.
- E. Backfill and compact depressions caused by excavations, demolition, and removal in accordance with the requirements of Section 31 20 00 - Earth Moving.

### **3.3 RESTORATION OF EXISTING STRUCTURES AND FACILITIES**

- A. All damage to existing structures and facilities, including utilities, which are to remain in place, shall be repaired to a condition equal to that existing prior to the beginning of demolition and removal operations. The cost of repairing existing structures and facilities damaged by the Contractor's operations shall be at the Contractor's expense.

### **3.4 CLEANUP**

- A. Provide a clean and orderly site.

END OF SECTION

**SECTION 03 30 00**  
**CAST-IN-PLACE CONCRETE**

**PART 1 - GENERAL**

**1.1 SECTION INCLUDES**

- A. Concrete Forms
  - 1. Abutments
  - 2. Foundations
  - 3. Retaining walls
- B. Concrete Reinforcing
  - 1. Detailing
  - 2. Bending
  - 3. Placement
  - 4. Amounts of cover for cast-in-place concrete
  - 5. Anchor bolts
  - 6. Dowels
  - 7. Inserts
  - 8. Lap Splices
- C. Curing Compound and Sealer

**1.2 RELATED SECTIONS**

- A. Section 03 10 00 - Concrete Formwork

**1.3 REFERENCES**

- A. ACI 304 Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete
- B. ACI 305R Hot Weather Concreting
- C. ACI 306R Cold Weather Concreting
- D. ACI 308 Standard Specification for Curing Concrete
- E. ACI 309 Guide for Consolidation of Concrete

- F. ACI 315 Details and Detailing of Concrete Reinforcement
- G. ACI 318 Building Code Requirements for Reinforced Concrete and Commentary
- H. ASTM C33 Standard Specification for Concrete Aggregates
- I. ASTM C94 Standard Specification for Ready-Mixed Concrete
- J. ASTM C150 Standard Specification for Portland Cement
- K. ASTM C309 Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
- L. ASTM C494 Standard Specification for Chemical Admixtures for Concrete
- M. ASTM A615 Standard Specification for Plain Billet-Steel Bars for Concrete Reinforcement
- N. ASTM C618 Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete
- O. ASTM C979 Standard Specification for Integral Concrete Coloring System
- P. California Code of Regulations (CCR):
  - CCR Title 8, Chapter 4, Subchapter 4 – Construction Safety Orders
  - CCR Title 24, Part 2, California Building Code, Chapter 33, Section 3303, Protection of Pedestrians during Construction or Demolition

#### 1.4 SUBMITTALS

- A. Product Data
  - 1. Curing / Sealing Compounds
  - 2. Admixtures
  - 3. Source of Concrete and Aggregates
- B. Shop Drawings
  - 1. Reinforcing Diagrams
  - 2. Bar Schedules
- C. Curing
  - 1. Curing Method
- D. Test Reports

1. Mill Test Reports

- a. Reinforcing Steel
- b. Cement

2. Concrete Mix Designs

Trial mixes including water-cement-fly ash ratio curves, concrete mix ingredients and proportions, and admixtures.

3. Grout Mix

To include mix ingredients, strength and shrinkage data

E. Delivery

With each batch of concrete, furnish certified delivery tickets listing information in Paragraphs 13.1 and 13.2 of ASTM C94. Maximum delivery temperature of concrete is 100 degrees Fahrenheit (F). Minimum delivery temperature as follows:

	<b>Atomospheric Temperature</b>	<b>Minimum Concrete Temperature</b>	
	30 degrees to 40 degrees F	60 degrees F	
	0 degrees to 30 degrees F	70 degrees F	

**PART 2 - PRODUCTS**

**2.1 MATERIALS**

A. Portland Cement

Clean, fresh, Type II, low alkali, Portland cement conforming with ASTM C150.

B. Pozzolan Fly-ash to be in conformance with ASTM C618.

C. Aggregates

- 1. Aggregates to be uniformly graded with a one inch maximum size for all concrete mixes.
- 2. Natural aggregates to be free from deleterious materials, conforming to ASTM C33. Aggregate is not to be potentially reactive as defined in Appendix XI of ASTM C33. Aggregates to be thoroughly and uniformly washed before use.

D. Mixing Water

Fresh, clean, potable and free from oil, acid, alkali, organic matter or other deleterious substances.

E. Admixtures

Admixtures, if used to be of a type conforming to ASTM C494 that increases the workability of the concrete, will not impair the strength of the concrete, and is not used to reduce the cement content of the mix. Do not use Calcium Chloride.

F. Liquid Membrane-Forming Curing Compound

Is to be clear or translucent, suitable for spray application and is to conform to ASTM C309, Type 1.

G. Cement Grout

Non-shrink type composed of one part cement, two parts sand and the minimum amount of water necessary to obtain the desired consistency.

H. Properties

1. 28 day strength of concrete in place to be a minimum of:
  - a. 3,000 psi for walls and abutments
  - b. 2,500 psi for drilled piers
2. The maximum water/cement ratio to be 0.44 for bridge deck.
3. Slump of concrete and not to exceed four (4) inches unless otherwise authorized by District.
4. 15% of cement weight may be Pozzolan Fly-ash. Pozzolan Fly-Ash to be in conformance with ASTM C618.

## 2.2 REINFORCING STEEL

- A. Bar reinforcement to be ASTM A615, Grade 60.

## PART 3 – EXECUTION

### 3.1 FORMS

- A. Reinforcing detailing, bending, and placing: In accordance with ACI 315 and ACI 318.
- B. Reinforcing steel to be provided with the following amounts of cover for cast-in-place concrete:
1. Concrete deposited against earth - three inches
  2. Concrete surface (formed) exposed to earth or weather:
    - a. #6 through #18 bars - two inches
    - b. #5 bar and smaller - 1-1/2 inches
- C. All reinforcing steel, anchor bolts, dowels, and inserts to be accurately placed and securely held in place prior to placing of concrete or grout.

- D. Horizontal bars to lap a minimum of 16 gauge black annealed wire chairs or concrete “dobies.”

### **3.2 MIXING CONCRETE**

- A. All concrete materials to be measured accurately for each batch and mixed thoroughly until aggregate is coated with mortar. Combined ingredients to be mixed for a minimum of 1-1/2 minutes.
- B. Concrete batching and mixing to comply with ACI 318 and ASTM C94, delivered to site. Batch mixing at the Site is not permitted.

### **3.3 PLACING CONCRETE**

#### **A. Preparation**

1. Remove hardened concrete, wood chips, shavings and other debris from forms.
2. Remove hardened concrete and foreign materials from interior surfaces of mixing and conveying equipment.
3. Have reinforcement inspected and approved by District before depositing concrete.
4. Forms and reinforcing bars to be clean and wetted prior to placing of the concrete.
5. Place anchor bolts and other embedments, as indicated.

#### **B. Conveying Concrete**

Convey concrete from mixer to final place of deposit by a method that will prevent segregation. Method of conveying concrete is subject to approval of District.

#### **C. Placing**

1. Concrete to be placed in conformance with the recommendations of ACI 304.
2. Do not place concrete when weather conditions prevent proper placement and consolidation, or when concrete has attained its initial set, or has contained its water or cement content more than 1-1/2 hours.
3. Deposit concrete as near as practicable in its final position. Prevent splashing of forms or reinforcement with concrete in advance of placing concrete.
4. Do not drop concrete freely more than five feet. Where greater drops are required, use a tremie or flexible spout attached to a suitable hopper.
5. Discharge contents of tremies or flexible spouts in horizontal layers not exceeding 20 inches in thickness, and space tremies such as to provide a minimum of lateral movement of concrete.

6. Continuously place concrete until an entire unit between construction joints is placed. Rate and method of placing concrete to be such that no concrete between construction joints will be deposited upon or against partly set concrete.
7. Continuously place all concrete with no more than 10 minutes elapsed time between pours. Sequence concrete pours such that each pour is placed on or adjacent to concrete that has been in place no more than 10 minutes.

D. Consolidation

Conform to ACI 309. Immediately after depositing, spade concrete next to forms, into corners and recesses, work around reinforcement and into angles of forms, tamp lightly by hand, and compact with mechanical vibrator. Vibrate concrete to produce thorough compaction, leaving no voids, complete embedment of reinforcement and concrete of uniform and maximum density without segregation of mix. Do not transport concrete in forms by vibration. Carry on vibration continuously with placing of concrete. Do not insert vibrator into concrete that has begun to set.

### 3.4 HOT OR COLD WEATHER

- A. Follow the recommendations of ACI 305R and ACI 306R for hot and cold weather conditions.

### 3.5 CONCRETE FINISHES

- A. Finish of formed surfaces to be smooth and free of fins, honeycomb, or segregation. When defects occur, they are to be remedied by chipping cavities and patching, or by other methods approved by District.
- B. Exposed surfaces to be "sacked" by rubbing cement mortar into voids with burlap or canvas. Fins to be ground smooth and loose mortar to be removed.
- C. Vertical edges of the walls to have 3/4-inch chamfer.
- D. Horizontal edges of the walls to have 1/2-inch chamfer.
- E. Unformed surfaces to be steel troweled to a smooth dense finish. After the trowel finish has sufficiently hardened, walking surfaces of the entire surface to be given a medium broom finish perpendicular to the direction of travel. The broom finish to be applied just prior to the application of the curing compound/sealer.

### 3.6 PROTECTION AND CURING

- A. In conformance with ACI 308, except as otherwise specified herein.
- B. Initial curing to immediately follow the finishing operation. Protect exposed surfaces of concrete from premature drying, wash by rain and running water, wind, mechanical injury, and excessively hot or cold temperatures. Concrete not covered with membrane or other curing material to be kept continuously wet for at least seven days after placing. High-early-strength concrete net curing period to be not less than three days. Keep wood forms continuously wet to prevent moisture loss until forms are removed. Cure exposed concrete surfaces as described below. Other curing methods may be used if approved by District.

1. Liquid Curing and Sealing Compounds

Apply by spray or roller in accordance with the manufacturer's instructions. Apply immediately after finishing. Maximum coverage to be 400 square feet per gallon on steel troweled surfaces, and 300 square feet per gallon on floated or broomed surfaces for the curing/sealing compound.

2. Plastic sheets

Apply as soon as concrete has hardened sufficiently to prevent surface damage. Utilize widest practical width sheet and overlap adjacent sheets two inches. Tightly seal joints with tape.

3. Paper

Utilize widest practical width paper and overlap adjacent sheets two inches. Tightly seal joints with sand, wood planks, pressure-sensitive tape, mastic or glue.

- C. Provisions are to be made to keep overspray for curing/sealing compounds from extending beyond bridge deck surface. Spray of curing/sealing compounds to cease if sustained winds exceed 10 miles per hour.

**3.7 CLEANING**

- A. Cleaning of equipment for delivery or placement of concrete is prohibited on site.

**3.8 ACCEPTANCE**

- A. Walking surfaces are to be free from trowel marks, uniform in appearance and with a surface plane tolerance not exceeding 1/4 inches in any 10 foot 0 inch when tested with a ten foot straightedge.

END OF SECTION



## SECTION 26 00 10

### BASIC ELECTRICAL REQUIREMENTS

#### PART 1 - GENERAL

##### 1.1 SUMMARY

A. Table of Contents, Division 26 - Electrical:

<u>SECTION NO.</u>	<u>SECTION TITLE</u>
260010	BASIC ELECTRICAL REQUIREMENTS
260519	BUILDING WIRE AND CABLE
260526	GROUNDING AND BONDING
260531	CONDUIT
260533	BOXES
260543	UNDERGROUND DUCTS AND STRUCTURES
260553	ELECTRICAL IDENTIFICATION
265600	EXTERIOR LIGHTING

B. Work included: This Section includes general administrative and procedural requirements for Division 26. The following administrative and procedural requirements are included in this Section to supplement the requirements specified in Division 01.

1. Quality assurance.
2. Definition of terms.
3. Submittals.
4. Coordination.
5. Record documents.
6. Operation and maintenance manuals.
7. Project management and coordination services.
8. Excavation.
9. Rough-in.
10. Electrical installation.
11. Cutting, patching, painting and sealing.
12. Field quality control.
13. Cleaning.
14. Project closeout.

C. Related Work: Consult all other Sections, determine the extent and character of related Work and properly coordinate Work specified herein with that specified elsewhere to produce a complete and operable installation.

1. General and supplementary conditions: Drawings and general provisions of Contract and Division 01 of the Specifications, apply to all Division 26 Sections.
2. Earthwork: Include trenching, backfilling, boring and soil compaction as required for the installation of underground conduit, in-grade pull boxes, vaults, lighting pole foundations, etc. Refer to Division 31, Earthwork.
3. Concrete Work: Include forming, steel bar reinforcing, cast-in-place concrete, finishing and grouting as required for underground conduit encasement, light pole foundations, pull box slabs, vaults, housekeeping pads, etc. Refer to Division 03, Concrete.
4. Miscellaneous metal Work: Include fittings, brackets, backing, supports, rods, welding and pipe as required for support and bracing of raceways, lighting fixtures, panelboards, distribution boards, switchboards, motor control centers, etc. Refer to Division 05, Miscellaneous Metals.
5. Miscellaneous lumber and framing Work: Include wood grounds, nailers, blocking, fasteners and anchorage for support of electrical materials and equipment. Refer to Division 06, Rough Carpentry.
6. Moisture protection and smoke barrier penetrations: Include membrane clamps, sheet metal flashing, counter flashing, caulking and sealant as required for waterproofing of conduit penetrations and sealing penetrations in or through fire walls, floors, ceiling slabs

and foundation walls. All penetrations through vapor barriers at slabs on grade shall be taped and made vaportight. Refer to Division 07, Thermal and Moisture Protection.

7. Access panels and doors: Required in walls, ceilings and floors to provide access to electrical devices and equipment. Refer to Division 08, Access Doors also, Division 05, Metals.
8. Painting: Include surface preparation, priming and finish coating as required for electrical cabinets, exposed conduit, pull and junction boxes, etc. where indicated as field painted in this Division. Refer to Division 09, Painting.

## 1.2 QUALITY ASSURANCE

- A. Reference to Codes, Standards, Specifications and recommendations of technical societies, trade organizations and governmental agencies shall mean that latest edition of such publications adopted and published prior to submittal of the bid. Such codes or standards shall be considered a part of this Specification as though fully repeated herein.
- B. When codes, standards, regulations, etc. allow Work of lesser quality or extent than is specified under this Division, nothing in said codes shall be construed or inferred authority for reducing the quality, requirements or extent of the Contract Documents. The Contract Documents address the minimum requirements for construction.
- C. Work shall be performed in accordance with all applicable requirements of the latest edition of all governing codes, rules and regulations including but not limited to the following minimum standards, whether statutory or not:
  1. California Electric Code (CEC)
  2. California Building Code (CBC).
  3. California Fire Code (CFC).
  4. California Mechanical Code (CMC).
- D. Standards: Equipment and materials specified under this Division shall conform to the following standards where applicable:

ACI	American Concrete Institute
ANSI	American National Standards Institute
ASTM	American Society for Testing Materials
CBM	Certified Ballast Manufacturers
ETL	Electrical Testing Laboratories
FS	Federal Specification
IEEE	Institute of Electrical and Electronics Engineers, Inc.
IPCEA	Insulated Power Cable Engineer Association
NEMA	National Electrical Manufacturer's Association
UL	Underwriters' Laboratories
- E. All base material shall be ASTM and/or ANSI standards.
- F. All electrical apparatus furnished under this Section shall conform to NEMA standards and the NEC and bear the UL label where such label is applicable.
- G. Certify that each welder performing Work has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone re-certification.

## 1.3 DEFINITION OF TERMS

- A. The following list of terms as used in the Division 26 documents shall be defined as follows:
  1. "Provide": Shall mean furnish, install and connect unless otherwise indicated.
  2. "Furnish": Shall mean purchase and deliver to Project site.
  3. "Install": Shall mean to physically install the items in-place.
  4. "Connect": Shall mean make final electrical connections for a complete operating piece of equipment.
  5. "As directed": Shall be as directed by the Owner or their authorized Representative.
  6. "Utility Companies": Shall mean the company providing electrical, telephone or cable television services to the Project.

## 1.4 SUBMITTALS

- A. Format: Furnish submittal data neatly bound in an 8-1/2" x 11" folder or binder for each Specification Section with a table of contents listing materials by Section and paragraph number.

- B. Submittals shall consist of detailed Shop Drawings, Specifications, block wiring diagrams, "catalog cuts" and data sheets containing physical and dimensional information, performance data, electrical characteristics, materials used in fabrication and material finish. Clearly indicate by arrows or brackets precisely what is being submitted on and those optional accessories which are included and those which are excluded. Furnish quantities of each submittal as noted in Division 01.
- C. Each submittal shall be labeled with the Specification Section Number and shall be accompanied by a cover letter or shall bear a stamp stating that the submittal has been thoroughly reviewed by the Contractor and is in full compliance with the requirements of the Contract Documents. Cover letters shall list in full the items and data submitted. Failure to comply with this requirement shall constitute grounds for rejection of data.
- D. The Contractor shall submit detailed Drawings of all electrical equipment rooms and closets if the proposed installation layout differs from the construction documents. Physical size of electrical equipment indicated on the Drawings shall match those of the electrical equipment that is being submitted for review, i.e.: switchboards, panelboards, transformers, control panels, etc. Minimum scale: 1/4" = 1'- 0". Revised electrical equipment layouts must be approved prior to release of order for equipment and prior to installation.
- E. All resubmittals shall include a cover letter that lists the action taken and revisions made to each Drawing and equipment data sheet in response to Submittal Review Comments. Resubmittal packages will not be reviewed unless accompanied by this cover letter. Failure to include this cover letter will constitute rejection of the resubmittal package.
- F. Substitutions:
  - 1. All requests for substitutions shall conform to the general requirements and procedure outlined in Division 01.
  - 2. Where items are noted as "or equal," a product of equal design, construction and performance will be considered. Contractor must submit to the Engineer all pertinent test data, catalog cuts and product information required substantiating that the product is in fact equal to that specified. Only one substitution will be considered for each product specified.
  - 3. Manufacturers' names and model numbers used in conjunction with materials, processes or equipment included in the Contract Documents are used to establish standards of quality, utility and appearance. Materials, processes or equipment, which in the opinion of the Engineer is equal in quality, utility and appearance, will be approved as substitutions to that specified.
  - 4. Whenever any material, process or equipment is specified in accordance with a Federal specification, an ASTM standard, an ANSI specification, UL rating or other association standard, the Contractor shall present an affidavit from the Manufacturer certifying that the product complies with the particular standard specification. When requested by the Engineer, support test data to substantiate compliance shall be submitted by the Contractor at no additional cost.
  - 5. Substitutions shall be equal, in the opinion of the Architect/Engineer, to the specified product. The burden of proof of such shall rest with the Contractor. When the Architect/Engineer in writing accepts a substitution, it is with the understanding that the Contractor guaranteed the substituted article or material to be equal to the one specified and dimensioned to fit within the construction. Approved substitutions shall not relieve the Contractor of responsibilities for the proper execution of the Work or from any provisions of the Specifications.
  - 6. The Contractor shall be responsible for all expenses in connection with the substitution materials, processes and equipment, including the effect of the substitution on the Contractor, Subcontractor's or other Contractor's Work. No substitution of material, processes or equipment shall be permitted without written authorization of the Architect/Engineer. Any assumptions on the acceptability of a proposed substitution prior to acceptance by the Engineer are at the sole risk of the Contractor.

## **1.5 COORDINATION**

- A. Discrepancies:

1. In the event of discrepancies within the Contract Documents, the Engineer shall be so notified, within sufficient time, as delineated in Division 01, prior to the Bid Opening to allow the issuance of an Addendum.
  2. If, in the event that time does not permit notification or clarification of discrepancies prior to the Bid Opening, the following shall apply: The Drawings govern in matters of quantity and the Specifications govern in matters of quality. In the event of conflict within the Drawings involving quantities or within the Specifications involving quantities or within the Specifications involving quality, the greater quantity and higher quality shall apply. Such discrepancies shall be noted and clarified in the Contractor's Bid. No additional allowances will be made because of errors, ambiguities or omissions that reasonably should have been discovered during the preparation of the Bid.
- B. Project conditions:
1. Examination of Project site: The Contractor shall visit the Project site and thoroughly review the locale, working conditions, conflicting utilities and the conditions in which the Electrical Work will take place. Verify all existing conditions in the field. No allowances will be made subsequently for any costs that may be incurred because of any error or omission due to failure to examine the Project site and to notify the Engineer of any discrepancies between Contract Documents and actual Project site conditions.
  2. Protection: Keep conduits, junction boxes, outlet boxes and other openings closed to prevent entry of foreign matter. Cover fixtures, equipment, devices and apparatus and protect them against dirt, paint, water, chemical or mechanical damage, before and during construction period. Prior to final acceptance, restore to original condition any fixture, apparatus or equipment damaged including restoration of damaged factory applied painted finishes. Protect bright finished surfaces and similar items until in service. No rust or damage will be permitted.
  3. Supervision: Contractor shall personally or through an authorized and competent representative constantly supervise the Work from beginning to completion and, within reason, keep the same foreman and workmen on the Project throughout the Project duration.
- C. Preparation:
1. Drawings:
    - a. Layout: General layout indicated on the Drawings shall be followed except where other Work may conflict with the Drawings.
    - b. Accuracy: Drawings for the Work under this Section are essentially diagrammatic within the constraints of the symbology applied.

## 1.6 RECORD DOCUMENTS

- A. Provide Project Record Drawings as described herein:
1. Drawings shall fully represent installed conditions including actual locations of outlets, true panelboard connections following phase balancing routines, correct conduit and wire sizing as well as routing, revised fixture schedule listing Manufacturers and products actually installed and revised panel schedules. Contractor shall record all changes in the Work during the course of construction on blue or black line prints. These prints shall be made subject of monthly review by the Owner's Representative to ascertain that they are current. If not current monthly payments may be withheld.
  2. Record Drawings shall be the transfer of information on these prints to the construction documents via computer aided drafting (CAD) process. A set of CAD files of the electrical documents will be provided to the Contractor.
  3. Record drawing submissions shall be provided to the Engineer to review upon the completion of the following phases of Work:
    - a. All underground installation.
    - b. Building electrical rough-in.
    - c. Final electrical installation.
  4. A single set of half size prints of the Record Drawings shall be submitted for review. Upon receipt of the Engineer's review comments, corrections shall be made and the Contractor shall provide the following:
    - a. Two sets of full size prints.

- b. Four sets of half size prints.
  - c. Electronic files of Drawings.
- B. Panel schedules:
1. Typewritten panel schedules shall be provided for panelboards indicating the loads served and the correct branch circuit number. Schedules shall be prepared on forms provided by the Manufacturer and inserted in the pocket of the inner door of each panelboard. See Section 262416: Panelboards for requirements.

**1.7 OPERATION AND MAINTENANCE MANUALS**

- A. Prior to Project closeout furnish to the Owner, six (6) hard back 3-ring binders containing all bulletins, operation and maintenance instructions, part lists, service telephone numbers and other pertinent information as noted in each Section all equipment furnished under Division 26. Binders shall be indexed into Division Sections and labeled for easy reference. Bulletins containing more information than the equipment concerned shall be properly stripped and assembled.

**PART 2 - PRODUCTS (NOT APPLICABLE)**

**PART 3 - EXECUTION**

**3.1 ROUGH-IN**

- A. Contractor shall verify lines, levels and dimensions indicated on the Drawings and shall be responsible for the accuracy of the setting out of Work and for its strict conformance with existing conditions at the Project site.
- B. Verify final locations for rough-ins with field measurements and with the requirements for the actual equipment to be connected.
- C. Refer to equipment specification in Divisions 22 through 33 for rough-in requirements.

**3.2 ELECTRICAL INSTALLATION**

- A. Preparation, sequencing, handling and installation shall be in accordance with Manufacturer's written instructions and technical data particular to the product specified and/or accepted equal except as otherwise specified. Comply with the following requirements:
1. Shop Drawings prepared by Manufacturer.
  2. Verify all dimensions by field measurements.
  3. Arrange for chases, slots and openings in other building components during progress of construction, to allow for electrical installations.
  4. Coordinate the installation of required supporting devices and sleeves to be set in poured-in-place concrete and other structural components, as they are constructed.
  5. Sequence, coordinate and integrate installations of electrical materials and equipment for efficient flow of the Work. Give particular attention to large equipment requiring positioning prior to closing in the building.
  6. Where mounting height is not detailed or dimensioned, contact the Architect for direction prior to proceeding with rough-in.
  7. Coordinate connection of electrical systems with exterior underground utilities and services. Comply with requirements of governing regulations, franchised service companies and controlling agencies. Provide required connection for each service.
  8. Install systems, materials and equipment to conform with approved submittal data, including coordination Drawings, to greatest extent possible. Conform to arrangements indicated by the Contract Documents, recognizing that portions of the Work are indicated only in diagrammatic form. Where coordination requirements conflict with individual system requirements, refer conflict to the Architect.
  9. Install systems, materials and equipment level and plumb, parallel and perpendicular to other building systems and components, where installed exposed in finished spaces.
  10. Install electrical equipment to facilitate servicing, maintenance and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.
  11. Coordinate electrical systems, equipment and materials installations with other building components.
  12. Provide access panel or doors where devices or equipment are concealed behind finished surfaces. Furnish and install access doors per the requirements of Division 08.

13. Install systems, materials and equipment giving right-of-way priority to other systems that are required to maintain a specified slope.
14. Conform to the National Electrical Contractor's Association "Standard of Installation" for general installation practice.

### **3.3 CUTTING, PATCHING, PAINTING AND SEALING**

- A. Structural members shall in no case be drilled, bored or notched in such a manner that will impair their structural value. Cutting of holes, if required, shall be done with core drill and only with the approval of the Architect and Structural Engineer.
- B. Protection of Installed Work: During cutting and patching operations, protect adjacent installations.
- C. Application of joint sealers:
  1. General: Comply with joint sealer Manufacturers' printed application instructions applicable to products and applications indicated, except where more stringent requirements apply.
  2. Installation of fire-stopping sealant: Install sealant, including forming, packing and other accessory materials, to fill openings around electrical services penetrating floors and walls, to provide fire-stops and fire-resistance ratings indicated for floor or wall assembly in which penetration occurs. Comply with installation requirements established by testing and inspecting agency.

### **3.4 FIELD QUALITY CONTROL**

- A. General testing requirements:
  1. The purpose of testing is to ensure that all tested electrical equipment, both Contractor and Owner supplied, is operational and within industry and Manufacturer's tolerances and is installed in accordance with design Specifications.
  2. Tests and inspections shall determine suitability for energization.
  3. Perform tests in presence of the Owner's Representative and furnish test equipment, facilities and technical personnel required to perform tests.
  4. Tests shall be conducted during the construction period and at completion to determine conformity with applicable codes and with these Specifications.
- B. Tests: In addition to specific system test described elsewhere, tests shall include:
  1. Lighting control circuits: Test lighting circuits for correct operation through their control devices.
  2. Circuit numbering verification: Select on a random basis various circuit breakers in the panelboards and cycle them on and off to verify compliance of the typed panel directories with actual field wiring.
- C. Testing safety and precautions:
  1. Safety practices shall include the following requirements:
    - a. Applicable State and Local safety operating procedures.
    - b. OSHA.
    - c. NSC.
    - d. NFPA 70E.
  2. All tests shall be performed with apparatus de-energized and grounded except where otherwise specifically required ungrounded by test procedure.
- D. Coordinate with General Contractor regarding testing schedule and availability of equipment ready for testing.
- E. Notify Owner one week in advance of any testing.
- F. Any products which fail during the tests or are ruled unsatisfactory by the Owner's Representative shall be replaced, repaired or corrected as prescribed by the Owner's Representative at the expense of the Contractor. Tests shall be performed after repairs, replacements or corrections until satisfactory performance is demonstrated.
- G. Include all test results in the maintenance manuals.

### **3.5 CLEANING**

- A. Prior to energizing of electrical equipment, the Contractor shall thoroughly clean the interior of enclosures from construction debris, scrap wire, etc. using Manufacturer's approved methods and materials.

- B. Upon completion of Project, prior to final acceptance, the Contractor shall thoroughly clean both the interior and exterior of all electrical equipment per Manufacturers approved methods and materials. Remove paint splatters and other spots, dirt and debris.
- C. Touch-up paint any marks, blemishes or other finish damage suffered during installation.

**3.6**

**PROJECT CLOSEOUT**

- A. Special tools: Provide one of each tool required for proper operation and maintenance of the equipment provided under this Section. All tools shall be delivered to the Owner at the Project completion.

**END OF SECTION**

## SECTION 26 05 19

### BUILDING WIRE AND CABLE

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Work included: Labor, materials and equipment necessary to complete the installation required for the item specified under this Division, including but not limited to:
  - 1. Building wire.
  - 2. Cable.
  - 3. Wiring connections and terminations.
- B. Related Work: Consult all other Sections, determine the extent and character of related Work and properly coordinate Work specified herein with that specified elsewhere to produce a complete installation.

##### 1.2 REFERENCES

- A. Comply with the latest edition of the following applicable Specifications and standards except as otherwise indicated or specified:
  - 1. Federal Specifications (FS):
    - FS J-C-30A; Cable and Wire, Electrical (Power, Fixed Installation).
    - FS W-S-610C; Splice Conductor.
    - FS HH-I-595C; Insulation Tape, Electrical, Pressure-Sensitive Adhesive, Plastic.
  - 2. Underwriters Laboratories, Inc. (UL):
    - UL 44; Thermoset-Insulated Wires and Cables.
    - UL 83; Thermoplastic-Insulated Wires and Cables.
    - UL 183; Manufactured Wiring Systems.
    - UL 310; Electrical Quick-Connect Terminals.
    - UL 486A & B; Wire Connectors.
    - UL 486C; Splicing Wire Connectors.
    - UL 486D; Insulated Wire Connector Systems for Underground Use or in Damp or Wet Locations.
    - UL 493; Thermoplastic-Insulated Underground Feeder and Branch Circuit Cables.
    - UL 510; Polyvinyl Chloride, Polyethylene and Rubber Insulating Tape.
    - UL 854; Service-Entrance Cables.
    - UL 1581; Reference Standard for Electrical Wires, Cables and Flexible Cords.
  - 3. National Electrical Manufacturer Association (NEMA):
    - NEMA WC-5; Thermoplastic Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
    - NEMA WC-7; Cross-Linked Thermosetting Polyethylene Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
  - 4. Institute of Electrical and Electronic Engineers (IEEE):
    - IEEE 82; Test Procedure for Impulse Voltage Tests on Insulated Conductors.

##### 1.3 SUBMITTALS

- A. Submit in accordance with the requirements of Section 260010: Basic Electrical Requirements, the following items:
  - 1. Data/catalog cuts for each product and component specified herein, listing all physical and electrical characteristics and ratings indicating compliance with all listed standards.
  - 2. Clearly mark on each data sheet the specific item(s) being submitted and the proposed application.
  - 3. Submit Manufacturer's installation instructions.
  - 4. Final test results.

##### 1.4 QUALITY ASSURANCE



- A. All materials, equipment and parts comprising the units specified herein shall be new, unused and currently under production.
- B. Only products and applications listed in this Section may be used on the Project unless otherwise submitted.

## **PART 2 - PRODUCTS**

### **2.1 MANUFACTURERS**

- A. Products furnished by the following Manufacturers shall be acceptable if in compliance with all features specified herein and indicated on the Drawings.
  - 1. Building wire:
    - a. Cerrowire
    - b. General Cable
    - c. Southwire Company
    - d. Stabiloy (aluminum only)
    - e. United Wire and Cable
  - 2. Wiring connectors and terminations:
    - a. 3M Company.
    - b. Ideal.
    - c. Blackburn-Holub.
    - d. Burndy.
    - e. Thomas & Betts Corp.
    - f. Beau Barrier.
- B. Substitutions: Under provisions of Section 260010: Basic Electrical Requirements.

### **2.2 BUILDING WIRE**

- A. Conductor material:
  - 1. Provide annealed copper for all wire, conductor and cable, unless otherwise indicated.
  - 2. Copper wire AWG #14 and larger shall be stranded, unless otherwise indicated.
  - 3. Copper wire AWG #16 and smaller may be solid or stranded as best suited for the installation.
- B. Insulation material:
  - 1. All insulated wire, conductor and cable shall be 600 volt rated unless otherwise noted on the Drawings.
  - 2. Thermoplastic-insulated building wire: NEMA WC 5.
  - 3. Rubber-insulated building wire: NEMA WC 3.
  - 4. Copper feeders and branch circuits larger than #6 AWG: Type dual rated THHN/THWN.
  - 5. Copper feeders and branch circuits #6 AWG and smaller: Type dual rated THHN/THWN.
  - 6. Service Entrance: Type RHW or THWN.
  - 7. Control Circuits: Type dual rated THHN/THWN.
  - 8. Identify system conductors as to voltage and phase connections by means of color-impregnated insulation. Use of phase tape for identification is not acceptable.

### **2.3 WIRING CONNECTIONS AND TERMINATIONS**

- A. Bolted pressure connectors: Provide wide range-taking connectors with cast bronze compression bolts, designed for parallel taps, tees, crosses or end-to-end connections.
- B. Electrical spring wire connectors:
  - 1. Provide multi-part construction incorporating a non-restricted, zinc coated square cross-section steel spring enclosed in a steel sheet with an outer jacket of plastic and insulating skirt.
  - 2. Self-striping pigtail and tap U-contact connectors shall not be used.
- C. Compression type terminating lugs:
  - 1. Provide tin-plated copper high-compression type lugs for installation with hand or hydraulically operated circumference-crimping tools and dies as stipulated by the lug Manufacturer or as indicated on Drawings. Notch or single point type crimping is NOT acceptable.
  - 2. Two hole, long barrel lugs shall be provided for size (4/0) and larger wire where terminated to bus bars. Use minimum of three crimps per lug, on sizes where possible.
- D. Splicing and insulating tape: Provide black, ultraviolet proof, self-extinguishing, 7 mil thick vinyl general purpose electrical tape with a dielectric strength of 10,000 volts suitable for

- temperatures from minus 18 degrees C to 105 degrees C. Federal Spec. HH-I-595, Scotch 33+ or equal minimum.
- E. Insulating putty:
    - 1. Provide pads or rolls of non-corrosive, self-fusing, one-eighth inch thick rubber putty with PVC backing sheet. Scotch vinyl mastic pads and roll or equal.
    - 2. Use putty suitable for temperatures from minus 17.8 degrees C to 37.8 degrees C with a dielectric strength of 570-volts/mil minimum.
  - F. Insulating resin:
    - 1. Provide two-part liquid epoxy resin with resin and catalyst in pre-measured, sealed mixing pouch. Scotchcast 4 or equal for wet or underground vaults, boxes, etc. splices or terminations.
    - 2. Use resin with a set up time of approximately 30 minutes at 21.1 degrees C and with thermal and dielectric properties equal to the insulating properties of the cables immersed in the resin.
  - G. Terminal strips:
    - 1. Provide box type terminal strips in the required quantity plus 25% spare. Install in continuous rows in terminal cabinets.
    - 2. Use the box type terminal strips with barrier open backs and with ampere ratings as required.
    - 3. Identify all terminals with numbering sequence being used for a particular system.
  - H. Crimp type connectors:
    - 1. Provide insulated fork or ring crimp terminals with tinned electrolytic copper-brazed barrel with funnel wire entry and insulation support
    - 2. Fasten crimp type connectors or terminals using a crimping tool recommended by the connector Manufacturer.
    - 3. Provide insulated overlap splices with tinned seamless electrolytic copper barrel with funnel wire entry and insulation support.
    - 4. Provide insulated butt splices with tinned seamless electrolytic copper barrel with center stop, funnel wire entry and insulation support.
  - I. Cable ties: Provide harnessing and point-to-point wire bundling with nylon cable ties. All cable ties shall be installed using tool supplied by Manufacturer of ties.
  - J. Wire lubricating compound:
    - 1. UL listed for the wire insulation and conduit type and shall not harden or become adhesive.
    - 2. Shall not be used on wire for isolated type electrical power systems.
  - K. Bolt termination hardware:
    - 1. Bolts shall be plated, medium carbon steel heat-treated, quenched and tempered equal to ASTM A-325 or SAE grade 5; or silicon bronze alloy ASTM B-9954 Type B.
    - 2. Nuts shall be heavy semi-finished hexagon, conforming to ANSI B18.2.2, threads to be unified coarse series (UNC), class 2B steel or silicon bronze alloy.
    - 3. Flat washers shall be steel or silicon bronze, Type A plain standard wide series, confirming to ANSI B27.2. SAE or narrow series shall not be used.
    - 4. Belleville conical spring washers shall be hardened steel, cadmium plated or silicon bronze.
    - 5. Each bolt connecting lug(s) to a terminal or bus shall not carry current exceeding the following values:
      - a. 1/4" bolt - 125 amps
      - b. 5/16" bolt - 175 amps
      - c. 3/8" bolt - 225 amps
      - d. 1/2" bolt - 300 amps
      - e. 5/8" bolt - 375 amps
      - f. 3/4" bolt - 450 amps

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A. Contractor shall thoroughly examine Project site conditions for acceptance of wire and cable installation to verify conformance with Manufacturer and Specification tolerances. Do not commence with installation until all conditions are made satisfactory.

### 3.2 APPLICATION

- A. All wire, conductor and cable with their respective connectors, fittings and supports shall be UL listed for the installed application and ambient condition.
- B. Feeders and branch circuits in wet locations shall be rated 75 degree C.
- C. Feeders and branch circuits in dry locations shall be rated 90 degree C.
- D. Minimum conductor size:
  - 1. Provide minimum AWG #12 for all power and lighting branch circuits.
  - 2. Provide minimum AWG #14 for all line voltage signal and control wiring unless otherwise indicated.
- E. Color coding:
  - 1. For 120/208 volt, 3 phase, 4 wire systems:
    - a. Phase A - Black
    - b. Phase B - Red
    - c. Phase C - Blue
    - d. Neutral - White
    - e. Ground - Green
    - f. Switch legs or traveler - Purple
  - 2. For 277/480 volt, 3 phase, 4 wire systems:
    - a. Phase A - Brown
    - b. Phase B - Orange
    - c. Phase C - Yellow
    - d. Neutral - Gray
    - e. Ground - Green
    - f. Switch legs or traveler - Pink
  - 3. Switch leg individually installed shall color as denoted above.
  - 4. Travelers for 3-way and 4-way switches shall color as denoted above.

### 3.3 WIRING METHODS

- A. Install wires and cables in accordance with Manufacturer's written instructions, as indicated on Drawings and as specified herein.
- B. Install all single conductors in raceway system, unless otherwise noted.
- C. Parallel circuit conductors and terminations shall be equal in length and identical in all ways.
- D. Provide adequate length of conductors within electrical enclosures and train the conductors to terminal points with no excess. Bundle multiple conductors, with conductors larger than #10 AWG cabled in individual circuits. Make terminations so there is no bare conductor at the terminal.
- E. 20 amp power and lighting branch circuit containing no more than four (4) current carrying conductors (phases and neutrals). Use #10 AWG conductor for 120/208 volt circuits located outside a 75 foot radius of panel source and for 277 volt branch circuits located outside a 200 foot radius of panel source, unless otherwise noted.
- F. 20 amp power and lighting branch circuits containing no more than eight (8) current carrying conductors (phases and neutrals). Use #10 AWG conductors for 120/208 volt circuits located outside a 65 foot radius of panel source and for 277/480 volt circuits located outside a 150 foot radius of panel source.
- G. Provide #10 AWG pig tails on all 20A and 30A wiring devices served by #8 AWG conductors and larger.
- H. Splice cables and wires only in outlet boxes, junction boxes, pull boxes, manholes or handholes. Group and bundle with tie wrap each neutral with it's associated phase conductor where more than one neutral is present in a conduit.
- I. Install cable supports for all vertical feeders in accordance with the NEC Article 300. Provide split wedge type fittings, which firmly clamp each individual cable and tighten due to cable weight.
- J. Neatly form, train and tie the cables in individual circuits. For panelboards, cabinets, wireways, switches and equipment assemblies.

- K. Seal cable or wire, entering a building from underground or exiting walk-in cold box or freezer, between the wire or cable and conduit, where it exits the conduit, with a non-hardening approved compound, i.e. duct seal or equal.
- L. Provide UL-listed factory-fabricated, solderless metal connectors of size, ampacity rating, material, type and class for applications and for services indicated. Use connectors with temperature ratings equal to or greater than the wires that are being terminated.
- M. Stranded wire shall be terminated using fitting, lugs or devices listed for the application. However, in no case shall stranded wire be terminated solely by wrapping it around a screw or bolt.
- N. Flexible cords and cables supplied, as part of a pre-manufacturer fixture or unit assembly shall be installed according to Manufacturers published installation instructions.

### 3.4 **WIRING INSTALLATION IN RACEWAYS**

- A. Install wire in raceway after interior of building has been physically protected from the weather and all mechanical Work likely to injure conductors has been completed. Pull all conductors into a raceway at the same time. Exercise care in pulling conductors so that insulation is not damaged. Use UL listed, non-petroleum base and insulating type pulling compound as needed.
- B. Completely mandrel all underground or concrete encased conduits prior to installing conductors.
- C. Completely and thoroughly swab raceway system before installing conductors.
- D. Do not use block and tackle, power driven winch or other mechanical means for pulling conductors of size smaller than AWG #1.
- E. Wire pulling:
  1. Provide installation equipment that will prevent the cutting or abrasion of insulation during pulling of cables.
  2. Use rope made of nonmetallic material for pulling feeders.
  3. Attach pulling lines for feeders by means of either woven basket grips or pulling eyes attached directly to the conductors.
  4. Pull in together multiple conductors or cables in a single conduit.
- F. Install and test all cables in accordance with Manufacturer's instructions and warranty.

### 3.5 **INSTALLATION IN MANHOLES**

- A. Install and support cables in manhole on the steel racks with porcelain or equal insulators, unless otherwise noted. Train the cables around the manhole walls, but do not bend to a radius less than six times the overall cable diameter.

### 3.6 **WIRE SPLICES, JOINTS AND TERMINATION**

- A. Join and terminate wire, conductors and cables in accordance with UL 486A, C, NEC and Manufacturer's instructions.
- B. Splicing of any wire within 100 feet of its source location or 100 feet of its termination location is prohibited.
- C. Thoroughly clean wires before installing lugs and connectors.
- D. Make splices, taps and terminations to carry full ampacity of conductors without perceptible temperature rise.
- E. Splices and terminations shall be made mechanically and electrically secure.
- F. Where it's determined that unsatisfactory splice or terminations have been installed, remove the devices and install approved devices at no addition cost.
- G. Terminate wires in Terminal Cabinets, relay and contactor panels, etc. using terminal strip connectors.
- H. Insulate spare conductors with electrical tape and leave sufficient length to terminate anywhere in the panel or cabinet.
- I. Install cable ties and maintain harnessing.
- J. Encapsulate splices in exterior outlets, pullboxes and junction boxes using specified insulating resin kits. Make all splices watertight for exterior equipment and equipment in pump rooms.
- K. Make up all splices and taps in accessible junction or outlet boxes with connectors as specified herein. Pigtails and taps shall be the same color as the feed conductor. Form

conductor prior to cutting and provide at least six (6) inches of tail and neatly packed in box after splice is made up.

- L. Branch circuits (#10 AWG and smaller):
  - 1. Connectors: Solderless, screw-on, reusable spring pressure cable type, 600 volt, 105-degree C. with integral insulation, approved for copper conductors.
  - 2. The integral insulator shall have a skirt to completely cover the stripped wires.
  - 3. The number, size and combination of conductors as listed on the Manufacturers packaging shall be strictly complied with.
- M. Feeder circuits: (#4 to 750 MCM)
  - 1. Join or tap conductors from #4 AWG to 750 MCM insulate mechanical compression (hi-press) taps with pre-molded, snap-on insulating boots or specified conformable insulating pad and over wrapped with two half-lapped layers of vinyl insulating tape starting and ending at the middle of the joint.
  - 2. Terminate conductors from size #4 AWG to 750 MCM copper using mechanical compression lugs in accordance with Manufacturer recommendation or as specified elsewhere.
  - 3. Field installed compression connectors for cable sizes 250 MCM and larger shall have not less than two clamping elements or compression indents per wire.
  - 4. Insulate splices and joints with materials approved for the particular use, location, voltage and temperature. Insulate with not less than that of the conductor level that is being joined.
- N. Termination hardware assemblies:
  - 1. AL/CU lugs connected to aluminum plated or copper buss, shall be secured using a steel bolt, flat washer (two per bolt), Belleville washer and nut.
  - 2. Copper lugs connected to copper bus, shall be secured using silicon bronze alloy bolt, flat washer (two per bolt), Belleville washer and nut.
  - 3. The crown of Belleville washers shall be under the nut.
  - 4. Bolt assemblies shall be torque to Manufacturer recommendation. Where manufacture recommendation are not obtainable, the following values shall be used:
    - a. 1/4" - 20 bolt at 80-inch pounds torque.
    - b. 5/16" - 18 bolt at 180-inch pounds torque.
    - c. 3/8" - 16 bolt at 20-foot pounds torque.
    - d. 1/2" - 13 bolt at 40-foot pounds torque.
    - e. 5/8" - 11 bolt at 55-foot pounds torque.
    - f. 3/4" - 10 bolt at 158-foot pounds torque.

### **3.7 IDENTIFICATION**

- A. Refer to Section 260553: Electrical Identification for additional requirements.
- B. Securely tag all branch circuits. Mark conductors with specified vinyl wrap-around markers. Where more than two conductors run through a single outlet, mark each conductor with the corresponding circuit number. This shall include all grounded and ungrounded conductors. Conductors shall be marked in all junction boxes, panelboards and switchboards.
- C. Provide all terminal strips with each individual terminal identified using specified vinyl markers.
- D. In manholes, pullboxes and handholes, provide tags of the embossed brass type and also show the cable type and voltage rating. Attach the tags to the cables with slip-free plastic cable lacing units.

### **3.8 FIELD QUALITY CONTROL**

- A. Independent testing: Contractor shall arrange and pay for the services of an independent Testing Agency to perform all quality control electrical testing required herein. Independent Testing Agency shall meet the requirements as outlined in Section 260010: Basic Electrical Requirements.
- B. Prefunctional testing:
  - 1. Visual and mechanical inspection:
    - a. Compare cable data with Contract Documents.
    - b. Inspect exposed sections of wires and cables for physical damage and proper connections.

- c. Verify tightness of accessible bolted connections with calibrated torque wrench in accordance with Manufacturer's published data.
- d. Inspect compression applied connectors for correct cable match and indentation.
- e. Verify visible cable bend meet or exceed ICEA and Manufacturer's minimum allowable bending radius.
- f. If cables are terminated through window type current transformers, make an inspection to verify neutral and ground conductors are correctly placed for operation of protective devices.
- g. Ensure wire and cable identification has been installed as specified herein.
- 2. Electrical testing:
  - a. Contractor shall perform feeder and branch circuit insulation test after installation and prior to connection to utilization devices such as fixtures, motors or appliances. Testing shall be as follows:
    - 1) 100% of all feeders 100 amp rated and above.
    - 2) 50% of all feeders smaller than 100 amps.
    - 3) 10% of all branch circuits at each individual panelboard.
  - b. Perform insulation-resistance test using megohm meter with applied potential of 1000V DC for a continuous duration of 60 seconds. Test conductors phase-to-phase and phase-to-ground. Conductors shall test free from short-circuit and ground faults.
  - c. Perform continuity test of all feeder and branch circuits to ensure correct cable connections. Test all neutrals for improper grounds.
  - d. Contractor shall furnish instruments, materials and labor for these tests.
- 3. Test values: Investigate resistance values less than 50 megohms.
- 4. Furnish test results in typewritten report form for review and inclusion in the operation and maintenance manuals.

**END OF SECTION**

## SECTION 26 05 26

### GROUNDING AND BONDING

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Work included: Labor, materials and equipment necessary to complete the installation required for the item specified under this Division, including but not limited to:
1. Site lighting grounding.
  2. Electrical equipment and raceway grounding and bonding.

##### 1.2 REFERENCES

- A. Comply with the latest edition of the following applicable Specifications and standards except as otherwise indicated or specified:
1. Underwriters Laboratories, Inc. (UL):  
UL 467; Grounding and Bonding Equipment.
  2. Institute of Electrical and Electronics Engineers, Inc. (IEEE):  
IEEE No. 142; Recommended Practice for Grounding of industrial and Commercial Power Systems.  
IEEE No. 81 Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System.

##### 1.3 SYSTEM DESCRIPTION

- A. Resistance:
1. Resistance from the main switchboard ground bus through the ground electrode to earth shall not exceed 5 OHMS unless otherwise noted.
  2. Resistance from the farthest panelboard, switchboard, etc. ground bus through the ground electrode to earth shall not exceed 20 OHMS

##### 1.4 SUBMITTALS

- A. Submit in accordance with the requirements of Section 260010: Basic Electrical Requirements, the following items:
1. Data/catalog cuts for each product and component specified herein, listing all physical and electrical characteristics and ratings indicating compliance with all listed standards.
  2. Clearly mark on each data sheet the specific item(s) being submitted and the proposed application.
  3. Submit Manufacturer's installation instructions.

##### 1.5 QUALITY ASSURANCE

- A. All materials, equipment and parts comprising the units specified herein shall be new, unused and currently under production.
- B. Only products and applications listed in this Section may be used on the Project unless otherwise submitted.

#### PART 2 - PRODUCTS

##### 2.1 MANUFACTURERS

- A. Products furnished by the following Manufacturers shall be acceptable if in compliance with all features specified herein and indicated on the Drawings.
1. Ground Rods:
    - a. Weaver.
    - b. Erico "Cadweld" Products, Inc.
  2. Ground Wells:
    - a. Christy Concrete Products, Inc.
    - b. Forni Corp.
  3. Ground Bushings, Connectors, Jumpers and Bus:
    - a. O-Z/Gedney.
    - b. Thomas & Betts Corp.
- B. Substitutions: Under provisions of Section 260010: Basic Electrical Requirements.

##### 2.2 GROUND CONDUCTORS

- A. Refer to Specification Section 260519: Building Wire and Cable for conductor specifications.

- B. General purpose insulated:
    1. UL approved and code sized copper conductor, with dual rated THHN/THWN insulation, color identified green.
    2. Where continuous color-coded conductors are not commercially available, provide a minimum 4" long color band with green, non-aging, plastic tape in accordance with NEC/CEC.
  - C. Bare conductors in direct contact with earth or encased in concrete: #4/0 AWG copper minimum, U.O.N.
  - D. Bonding pigtails: Insulated copper conductor, identified green, sized per code and provide with termination screw or lug. Provide solid conductors for #10 AWG or smaller and stranded conductors for #8 AWG or larger.
- 2.3 DRIVEN (GROUND) RODS**
- A. Copper clad steel, minimum 3/4-inch diameter by 8 feet long, unless otherwise noted.
- 2.4 GROUND WELL BOXES FOR GROUND RODS**
- A. Precast concrete box nominal 9" throat diameter x 14" deep with light duty concrete cover for non-traffic areas or steel plate for traffic areas. Cover shall be embossed or engraved with "GROUND ROD".
- 2.5 INSULATED GROUNDING BUSHINGS**
- A. Plated malleable iron or steel body with 150 degree Centigrade molded plastic insulating throat and lay-in grounding lug.

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. Contractor shall thoroughly examine Project site conditions for acceptance of grounding system installation to verify conformance with Manufacturer and Specification tolerances. Do not commence with installation until all conditions are made satisfactory.

**3.2 INSTALLATION**

- A. Equipment bonding/grounding:
  1. Provide a NEC/CEC sized insulated copper ground conductor in all 120VAC through 600 VAC feeder and branch circuit distribution conduits and cables.
  2. Provide a separate grounding bus at panelboards, switchboards, etc.. Connect all metallic enclosed equipment so that with maximum fault current flowing, shall be maintained at not more than 35 volts above ground.
  3. Conduit terminating in concentric, eccentric or oversized knockouts at panelboards, cabinets, gutters, etc. shall have grounding bushings and bonding jumpers installed interconnecting all such conduits.
  4. Provide bonding jumpers across expansion and deflection couplings in conduit runs, pipe connections to water meters, dielectric couplings in metallic cold water piping system.
  5. Provide internal ground wire in flexible conduit connected at each end via grounding bushing.
  6. Provide external ground wire wrapped around flexible conduit and terminate to connectors designed for the purpose.
- B. Site lighting grounding: Bond all metallic light poles and bollards. Provide ground rods where indicated on the Drawings.

**3.3 FIELD QUALITY CONTROL**

- A. Prefunctional testing:
  1. Visual and mechanical inspection:
    - a. Check tightness and welds of all ground conductor terminations.
    - b. Verify installation complies with the intent of the Contract Documents
  2. Obtain and record ground resistance measurements both from electrical equipment ground bus to the ground electrode and from the ground electrode to earth. Furnish and install additional bonding and add grounding electrodes as required complying with resistance limits specified under this Section of the Specification.



3. A typewritten record of measured resistance values shall be submitted for review and included with the operation and maintenance manual furnished to the Owner at the time of Project closeout and before certificate of final payment is issued.

**END OF SECTION**

## SECTION 26 05 31

### CONDUIT

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Work included: Labor, materials and equipment necessary to complete the installation required for the item specified under this Division, including but not limited to:
  - 1. Rigid steel conduit and fittings.
  - 2. PVC insulated rigid steel conduit and fittings.
  - 3. Electrical metallic tubing and fittings.
  - 4. Rigid non-metallic conduit and fittings.
  - 5. Flexible metallic conduit and fittings.
  - 6. Liquidtight flexible metallic conduit and fittings.
  - 7. Rigid aluminum conduit and fittings.
  - 8. Miscellaneous conduit fittings and products.
- B. Related Work: Consult all other Sections, determine the extent and character of related Work and properly coordinate Work specified herein with that specified elsewhere to produce a complete installation.
  - 1. Division 01: Cutting and patching.
  - 2. Division 07: Sheet metal flashing and trim.
  - 3. Division 09: Painting. Exposed conduit and other devices.

##### 1.2 REFERENCES

- A. Comply with the latest edition of the following applicable Specifications and standards except as otherwise indicated or specified:
  - 1. Federal Specifications (FS):
    - FS WW-C-563; Electrical Metallic Tubing.
    - FS WW-C-566; Specification for Flexible Metal Conduit.
    - FS WW-C-581; Specification for Galvanized Rigid Conduit.
    - FS W-C-1094A; Conduit and Conduit Fittings Plastic, Rigid.
  - 2. American National Standards Institute, Inc. (ANSI):
    - ANSI C80.1; Rigid Steel Conduit, Zinc-Coated.
    - ANSI C80.3; Electrical Metallic Tubing, Zinc Coated.
    - ANSI C80.5; Rigid Aluminum Conduit.
  - 3. Underwriters Laboratories, Inc. (UL):
    - UL 1; Flexible Metal Conduit.
    - UL 6; Rigid Metal Conduit.
    - UL 360; Liquid-Tight Flexible Steel Conduit.
    - UL 514B; Conduit, Tubing and Cable Fittings.
    - UL 635; Insulating Bushings.
    - UL 651; Schedule 40 and 80 Rigid PVC Conduit.
    - UL 797; Electrical Metallic Tubing - Steel.
  - 4. National Electrical Manufacturer Association (NEMA):
    - NEMA RN1; PVC Externally coated Galvanized Rigid Steel Conduit.
    - NEMA TC 2; Electrical Plastic Tubing and Conduit.
    - NEMA TC 3; PVC Fittings for use with Rigid PVC Conduit.

##### 1.3 SUBMITTALS

- A. Submit in accordance with the requirements of Section 260010: Basic Electrical Requirements the following items:
  - 1. Data/catalog cuts for each product and component specified herein, listing all physical and electrical characteristics and ratings indicating compliance with all listed standards.
  - 2. Clearly mark on each data sheet the specific item(s) being submitted and the proposed application.
  - 3. Submit Manufacturer's installation instruction. Provide written instructions for raceway products requiring glues, special tools or specific installation techniques.

#### 1.4 QUALITY ASSURANCE

- A. All materials, equipment and parts comprising the units specified herein shall be new, unused and currently under production.
- B. Only products and applications listed in this Section may be used on the Project unless otherwise submitted and approved.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Products furnished by the following Manufacturers shall be acceptable if in compliance with all features specified herein and indicated on the Drawings.
  - 1. Metal conduit:
    - a. Allied Tube and Conduit Co.
    - b. Triangle PWC, Inc.
    - c. Western Tube and Conduit Corp.
    - d. Spring City Electrical Manufacturing Co.
    - e. Occidental Coating Co. (OCAL).
    - f. Alflex Corp.
    - g. American Flexible Metal Conduit Co.
    - h. Anaconda.
  - 2. Nonmetallic conduit:
    - a. Prime Conduit.
    - b. JM Eagle.
    - c. Cantex.
  - 3. Fittings:
    - a. Appleton Electric Co.
    - b. OZ/Gedney.
    - c. Thomas & Betts Corp.
    - d. Spring City Electrical Manufacturing Co.
    - e. Occidental Coating Co. (OCAL).
    - f. Carlon.
- B. Substitutions: Under provisions of Section 260010: Basic Electrical Requirements.

#### 2.2 GALVANIZED RIGID STEEL CONDUIT (GRS)

- A. Conduit: Full weight, threaded, hot-dip galvanized steel, conforming to ANSI C80.1 and UL 6.
- B. Standard threaded couplings, locknuts, bushings and elbows: Only materials of steel or malleable iron are acceptable. Locknuts shall be bonding type with sharp edges for digging into the metal wall of an enclosure.
- C. Three piece couplings: Electroplated, cast malleable iron.
- D. Insulating bushings: Threaded polypropylene or thermosetting phenolic rated 150 degree C minimum.
- E. Insulated grounding bushings: Threaded cast malleable iron body with insulated throat and steel "lay-in" ground lug with compression screw.
- F. Insulated metallic bushings: Threaded cast malleable iron body with plastic insulated throat rated 150 degrees C.
- G. All fittings and connectors shall be threaded.

#### 2.3 PVC INSULATED GALVANIZED RIGID STEEL CONDUIT (PVC GRS)

- A. Conduit: Full weight, threaded, hot-dip galvanized steel, conforming to ANSI C80.1 and NEMA RN-1 with nominal 20 or 40 mil thermoplastic vinyl coating, heat fused and bonded to the exterior of the conduit.
- B. Fittings: Conduit couplings and connectors shall be as specified for galvanized rigid steel conduit and shall be factory PVC coated with an insulating jacket equivalent to that of the coated material.

#### 2.4 ELECTRICAL METALLIC TUBING (EMT)

- A. Conduit: Shall be formed of cold rolled strip steel, electrical resistance welded continuously along the longitudinal seam and hot dip galvanized after fabrication. Conduit shall conform to ANSI C80.3 Specifications and shall meet UL requirements.

- B. Set screw type couplings: Electroplated, steel or cast malleable iron, UL listed concretetight. Use set screw type couplings with four setscrews each of conduit sizes over 2 inches. Setscrews shall be of case hardened steel with hex head and cup point to firmly seat in wall of conduit for positive grounding.
  - C. Set screw type connectors: Electroplated steel or cast malleable iron UL listed concrete tight with male hub and insulated plastic throat, 150 degree C temperature rated. Setscrew shall be same as for couplings.
  - D. Raintight couplings: Electroplate steel or cast malleable iron; UL listed raintight and concrete tight, using gland and ring compression type construction.
  - E. Raintight connectors: Electroplated steel or cast malleable iron, UL listed raintight and concrete tight, with insulated throat, using gland and ring compression type construction.
  - F. The use of "factory fittings" is prohibited.
- 2.5 **RIGID NON-METALLIC CONDUIT (PVC)**
- A. Conduit:
    1. Rigid polyvinyl chloride, Schedule 40 or 80 conforming to NEMA TC1 and UL 651, latest edition. UL listed for exposed and direct-burial applications and for 90 degrees C conductor insulation. Conduit shall include an integral bell fitting at one end.
    2. Rigid polyvinyl chloride, Type EB or DB conforming to NEMA TC 6 and UL 651, latest edition. UL listed for concrete encased burial and direct burial applications and for 90 degrees C conductor insulation. Conduit shall include an integral bell fitting at one end.
  - B. Fittings: Couplings, adaptors, transition fittings, etc., shall be molded PVC, slip on, solvent weld type conforming to NEMA TC3 for Schedule 40 or 80 and NEMA TC 9 for type EB or DB.
- 2.6 **FLEXIBLE METALLIC CONDUIT (FMC)**
- A. Conduit: Shall be fabricated in continuous lengths from galvanized steel strip, spirally wound and formed to provide an interlocking design and conforming to UL 1.
  - B. Fittings: Connectors shall be of the single screw clamp variety with steel or cast malleable iron bodies and threaded male hubs with insulated throats. Exception: Pressure cast screw-in connectors shall be acceptable for fixture connection in suspended ceilings and cut-in outlet boxes within existing furred walls.
- 2.7 **LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC)**
- A. Conduit: Shall be fabricated in continuous lengths from galvanized steel strips, interlocking spirally wound, covered with extruded liquidtight jacket of polyvinyl chloride (PVC) and conforming to UL 360. Provide conduit with a continuous copper-bonding conductor wound spirally between the convolutions.
  - B. Fittings: Connector body and gland nut shall be of cadmium plated steel or cast malleable iron, with tapered, male, threaded hub; insulated throat and neoprene "O" ring gasket recessed into the face of the stop nut. The clamping gland shall be of molded nylon with an integral brass push-in ferrule.
- 2.8 **RIGID ALUMINUM CONDUIT (RAL)**
- A. Conduit: Aluminum meeting the requirements of ANSI C80.5.
  - B. Fittings: Conduit couplings, connectors, bushings and elbows shall be aluminum.
  - C. The use of "factory fittings" is prohibited.
- 2.9 **MISCELLANEOUS CONDUIT FITTINGS AND PRODUCTS**
- A. Watertight conduit entrance seals: Steel or cast malleable iron bodies and pressure clamps with PVC sleeve, neoprene sealing grommets and PVC coated steel pressure rings. Fittings shall be supplied with neoprene sealing rings between the body and PVC sleeve.
  - B. Watertight cable sealing bushings: One piece, compression molded sealing ring with PVC coated steel pressure disks, stainless steel sealing screws and zinc plated cast malleable iron locking collar.
  - C. Expansion fittings: Multi-piece unit comprised of a hot dip galvanized malleable iron or steel body and outside pressure bussing designed to allow a maximum of 4" conduit movement (2" in either direction). Furnish with external braid tinned copper bonding jumper. Unit shall be UL listed for wet or dry locations.
  - D. Expansion/deflection couplings: Multi-piece unit comprised of a neoprene sleeve with internal flexible tinned copper braid attached to bronze end couplings with stainless steel

bands. Coupling shall accommodate .75-inch deflection, expansion or contraction in any direction and allow 30-degree angular deflections. Flexible, corrosion-resistant, watertight, moisture and heat resistant molded rubber jacket and stainless steel jacket clamps. Unit shall comply with UL467 and UL514. Manufacturer shall be OZ/Gedney Type DX, Steel City Type EDF or equal.

- E. Fire rated penetration seals:
  - 1. UL building materials directory classified.
  - 2. Conduit penetrations in fire rated separation shall be sealed with a UL classified fill, void or cavity material.
  - 3. The fire rated sealant material shall be the product best suited for each type of penetration and may be a caulk, putty, composite sheet or wrap/strip.
- F. Standard products not herein specified:
  - 1. Provide listing of standard electrical conduit hardware and fittings not herein specified for approval prior to use or installation, i.e. locknuts, bushings, etc.
  - 2. Listing shall include Manufacturers name, part numbers and a written description of the item indicating type of material and construction.
  - 3. Miscellaneous components shall be equal in quality, material and construction to similar items herein specified.
- G. Hazardous area fittings: UL listed for the application.
- H. The use of "factory fittings" is prohibited.

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A. Contractor shall thoroughly examine Project site conditions for acceptance of conduit system installation to verify conformance with Manufacturer and Specification tolerances. Do not commence with installation until all conditions are made satisfactory.

#### **3.2 APPLICATION**

- A. Galvanized rigid steel conduit (GRS) shall be used in the following applications:
  - 1. For feeders and branch circuits located indoors, concealed or exposed above suspended ceilings, in damp/wet locations, in crawl spaces, in attics, chases, furred spaces, equipment rooms, loading docks or in hazardous locations in accordance with NEC and local Codes.
  - 2. For feeders and branch circuits concealed in concrete floors and walls when not in contact with earth.
  - 3. For feeders and branch circuits in areas subject to moisture.
  - 4. For exposed conduit where food is being pre
- B. PVC insulated galvanized rigid steel conduit shall be used in the following applications:
  - 1. Use 40-mil coating for feeders and branch circuits in damp or wet locations.
  - 2. Use 20 or 40 mil for feeders and branch circuits concealed in concrete walls or slabs in contact with earth.
  - 3. Use 20 or 40-mil for runs beneath floor slabs on grade.
  - 4. Use 40-mil for all below grade penetrations through floor slabs on grade or exterior walls.
- C. Electrical metallic tubing (EMT): Shall be used exposed or concealed for interior electrical feeders 4" and smaller, interior power and lighting branch circuits and low tension distribution system where run above suspended ceilings, in concrete slabs and walls not in contact with earth; in stud walls, furred spaces and crawl spaces. EMT shall not be installed exposed below 6 feet above the finish floor except within electrical, communication or signal rooms or closets. EMT shall not be installed where subject to moisture.
- D. Rigid non-metallic conduit (PVC): Shall be used in the following applications:
  - 1. Schedule 40 or 80 for feeders and branch circuits run beneath ground floor slab except that bends and penetrations through the floor must be PVC coated galvanized rigid steel.
  - 2. Schedule 40 or 80 for exterior branch circuits directly buried in earth, 18" minimum below grade. PVC may be used below exterior slabs not subject to vehicular traffic.
  - 3. PVC elbows shall be radius sweep type schedule 40 for bends 45° or less and large radius sweep type schedule 80 for bends 46° or greater.
  - 4. In general, PVC may not be run exposed in concrete walls or in floor slabs unless expressly indicated on the Drawings.

- E. Flexible metallic conduit (FMC): Shall be used only in dry locations for connections from an adjacent outlet box or conduit to all motors, transformers, vibrating equipment or machinery, controllers, solenoid valves, float and flow switches or similar devices and to lighting fixtures installed in suspended ceilings, minimum sizes shall be 1/2" U.O.N. Shall not be used in lengths over twenty feet between accessible boxes. FMC shall only be installed in locations concealed by building finishes (i.e. above ceiling). Areas that are not concealed shall be LFMC.
- F. Liquidtight flexible metallic conduit (LFMC): Shall be used in dry, wet or damp locations for connections from adjacent outlet box or conduit to all motors, transformers, vibrating equipment or machinery, controllers, solenoid valves, float and flow switches or similar devices. These areas are typically food preparation and dishwashing areas, sump wells, loading docks, pump rooms, exterior areas, etc. Minimum sizes shall be 1/2". When using flexible conduit in an area not concealed, LFMC shall be used. Shall be used for feeders and branch circuits installed exposed in areas where food is being prepped or served.
- G. Rigid aluminum conduit (RAL): Shall be used for feeders and branch circuits installed exposed in areas where food is being prepped or served. Fittings shall be watertight with "Meyers Hubs" and NEMA 4X enclosures.

### 3.3 PREPARATION

- A. Locations of conduit runs shall be planned in advance of the installation and coordinated with ductwork, plumbing, ceiling and wall construction in the same areas and shall not unnecessarily cross other conduits or pipe, nor prevent removal of ceiling tiles or panels, nor block access to mechanical or electrical equipment.
- B. Where practical, install conduits in groups in parallel vertical or horizontal runs and at elevations that avoid unnecessary offsets.
- C. All conduits shall be run parallel or at right angles to the centerlines of columns and beams, whether routed exposed, concealed above suspended ceiling or in concrete slabs.
- D. Conduits shall not be placed closer than 12 inches to a flue, parallel hot water, steam line or other heat producing source or three inches from such lines when crossing perpendicular to the runs.
- E. Exposed conduit installation shall not encroach into the ceiling height headroom of walkways or doorways. Where possible, install horizontal raceway runs above water and below steam piping.
- F. The largest trade size conduits in concrete floor and wall slabs shall not exceed 1/3 the floor or wall thickness and conduits shall be spaced a minimum of three conduit diameters apart unless otherwise noted on the Drawings. All conduits shall be installed in the center of concrete slabs or wall and shall not be placed between reinforcing steel and the bottom of floor slabs.
- G. In long runs of conduit, provide sufficient pull boxes inside buildings to facilitate pulling wires and cables, with spacing not to exceed 150 feet. Support pull boxes from structure independent of conduit supports. These pull boxes are not indicated on the Drawings.
- H. Provide all reasonably inferred standard conduits fitting and products required to complete conduit installation to meet the intended application whether noted, indicated or specified in the Contract Documents or not.
- I. Connect recessed lighting fixtures to conduit runs with maximum six feet of flexible metal conduit.

### 3.4 INSTALLATION

- A. Install conduit in accordance with Manufacturer's written instructions, as indicated on Drawings and as specified herein.
- B. Minimum Conduit Size: Unless otherwise noted herein or on Drawings, minimum conduit size shall be 1/2" for interior applications and 3/4" for exterior and underground applications.
- C. All conduit sizes indicated on the Drawings are sized for copper conductors with THHN/THWN insulation. If conductor type or size is changed the Contractor shall be responsible for resizing conduits upward to meet Code.
- D. In general, all conduit work shall be concealed where possible. Exceptions shall be electrical, communication and mechanical rooms, exposed ceiling areas, and parking garages.

- E. Conduit connections to motors and surface cabinets shall be concealed, with the exception of electrical, communication and mechanical rooms, or unless exposed Work is clearly called for on the Drawings.
- F. Install conduits in complete runs before pulling in cables or wires.
- G. Install conduit free from dented, bruises or deformations. Remove and replace any damaged conduits with new undamaged material.
- H. Conduits shall be well protected and tightly covered during construction using metallic bushings and bushing "pennies" to seal open ends.
- I. In making joints in rigid steel conduit, ream conduit smooth after cutting and threading. Coat all field-threaded joints with UL approved conductive type compound to ensure low resistance ground continuity through conduit and to prevent seizing and corrosion.
- J. Clean any conduit in which moisture or any foreign matter has collected before pulling in conductors. Paint all field-threaded joints to prevent corrosion.
- K. In all empty conduits or ducts, install a "True Tape" conduit measuring tape line to provide overall conduit length for determining length of cables/conductors for future use.
- L. Conduit systems shall be mechanically and electrically continuous throughout. Install code size, insulated, copper, green-grounding conductors in all conduit runs for branch circuits and feeders. This conductor is not indicated on the Drawings. Refer to Section 260526: Grounding and Bonding.
- M. Metallic conduit shall not be in contact with other dissimilar metal pipes (i.e. plumbing).
- N. Make bends with standard conduit bending hand tool or machines. The use of any item not specifically designed for the bending of electrical conduit is strictly prohibited. Factory bends are not acceptable, with the exception of PVC. EMT shall have no couplings within 30 inches of the center of the bend.
- O. A run of conduit between terminations at wire pulling points shall not contain more than the equivalent of four quarter bends (360 degrees, total).
- P. Above grade conduit for conductors above 600 volts use rigid steel.

### 3.5 PENETRATIONS

- A. Locate penetrations and holes in advance where they are proposed in the structural sections such as footings, beams, wall, etc. Penetrations are acceptable only when the following occurs:
  - 1. Where indicated on the Structural Drawings.
  - 2. As approved by the Structural Engineer prior to construction and after submittal of Drawing showing location, size and position of each penetration.
- B. Cutting or holes:
  - 1. Cut holes through concrete, masonry block or brick floors and floors of structure with a diamond core drill or concrete saw. Pneumatic hammer, impact electric, hand or manual hammer type drills are not allowed, except where permitted by the Structural Engineer as required by limited working space. Obtain the approval of the Structural Engineer prior to drilling through structural sections.
  - 2. Provide sleeves or "can outs" for cast-in-place concrete floors and walls. Following conduit installation, seal all penetrations using non-iron bearing, chloride free, non-shrinking, dry-pack grouting compounds; or fire rated penetration-sealing materials.
  - 3. Cut holes for conduit penetrations through non-concrete and non-masonry walls, partitions or floors with a hole saw. The hole shall be only as large as required to accommodate the size of the conduit.
  - 4. Provide single piece escutcheon plates around all exposed conduit penetrations in public places.
- C. Sealing:
  - 1. Non-rated penetrations: Pack opening around conduits with non-flammable insulating material and seal with gypsum wallboard taping compound.
  - 2. Fire stop: Where conduits, wireways and other electrical raceways pass through fire rated partitions, walls, smoke partitions or floor; install a UL classified fire stop material to provide an effective barrier against the spread of fire, smoke and gases. Completely fill and seal clearances between raceways and openings with the fire stop material.

- D. Waterproofing: At floor, exterior wall and roof conduit penetrations, completely seal clearances around the conduit and make watertight as specified in Division 07: Sealants and Caulking.
  - 1. Install specified watertight conduit entrance seals at all below grade wall and floor penetrations. Conduits penetrating exterior building walls and building floor slab shall be PVC coated rigid galvanized steel.
  - 2. For roof penetrations furnish and install roof flashing, counter flashing and pitch-pockets as specified under Roofing and Sheet Metal Sections of the Specifications.
  - 3. Provide membrane clamps and cable sealing fittings for any conduit that horizontally penetrates the waterproof membrane.
  - 4. Conduits that horizontally penetrate a waterproof membrane shall fall away from and below the penetration on the exterior side a minimum of two times the conduit diameters.

### **3.6 CONCEALED IN CONCRETE**

- A. Install conduits approximately in the center of the slab so that there will be a minimum of 3/4-inch of concrete around the conduits.
- B. Installation of conduit in structural concrete that is less than three inches thick is prohibited. Topping slabs, maintenance pads and curbs are exempted.
- C. Tie conduits to reinforcing rods or otherwise secure them to prevent sagging or shifting during concrete placement. Run conduit larger than 1-inch trade size, parallel with or at right angles to the main reinforcement; where at right angles to the reinforcement, the conduit shall be close to one of the supports of the slab.
- D. Where nonmetallic conduit or tubing is used, raceways must be converted to PVC coated rigid steel conduit before rising above floor.
- E. Make couplings and connections watertight.
- F. Protect stub-ups from damage where conduits rise from floor slabs. Arrange so curved portion of bends is not visible above the finished slab.

### **3.7 TERMINATIONS AND JOINTS**

- A. Use raceway fittings that are of types compatible with the associated raceway and suitable for the use and location.
- B. Raceways shall be joined using specified couplings or transition couplings where dissimilar raceway systems are joined.
- C. Conduits shall be securely fastened to cabinets, boxes and gutters using two locknuts and an insulating bushing or specified insulated connectors. Where joints cannot be made tight, use bonding jumpers to provide electrical continuity of the raceway system. Where terminations are subject to vibration, use bonding bushings or wedges to assure electrical continuity. Where subject to vibration or dampness, use insulating bushings to protect conductors. Install grounding bushings or bonding jumpers on all conduits terminating at concentric or eccentric knockouts.
- D. Conduit terminations exposed at weatherproof enclosures and cast outlet boxes shall be made watertight using specified connectors and hubs.
- E. Stub-up connections: Extend conduits through concrete floor for connection to freestanding equipment with an adjustable top or coupling threaded inside for plugs and set flush with the finished floor. Extend conductors to equipment with rigid steel conduit; flexible metal conduit may be used 6 inches above the floor. Where equipment connections are not made under this contract, install screwdriver operated threaded flush plugs with floor.
- F. Install specified cable sealing bushings on all conduits originating outside the building walls and terminating in switchgear, cabinets or gutters inside the building. Install cable sealing bushings or raceway seal for conduit terminations in all grade level or below grade exterior pull, junction or outlet boxes.
- G. Raceway seal: Inject into wire filled raceways, a pre-formulated rigid 2 lbs. density polyurethane foam which expands a minimum 35 times it's original bulk. Foam shall have the physical properties of water vapor transmission of 1.2 to 3.0 perms; water absorption less than 2% by volume, fungus and bacterial resistant. Foam shall permanent seal against water, moisture, insects and rodents. Install raceway sealing foam at the following points:



1. Where conduits pass from warm locations to cold locations to prevent passage of water vapor (such as refrigerated spaces, constant temperature rooms, air-conditioned spaces, etc.).
  2. Where conduits enter buildings from below grade.
- H. Install expansion couplings where any conduit crosses a building separation or expansion joint as follows:
1. Conduits three inches and larger, shall be rigidly secured to the building structure on opposite sides of a building expansion joint and provided with expansion or deflection couplings. Install the couplings in accordance with the Manufacturer's recommendations.
  2. Conduits smaller than three inches shall be rigidly secured to the building structure on opposite sides of a building expansion joint with junction boxes on both sides of the joint. Connect conduits to junction boxes with 15 inches of slack flexible conduit. Flexible conduit shall have a copper green ground-bonding jumper installed. For concrete embedded conduit, use expansion and deflection couplings as specified above for three inches and larger conduits.
- I. Use short length (maximum of 6ft) of the appropriate FMC or LFMC conduit for connections to motors and other electrical equipment subject to movement, vibration, misalignment, cramped quarters or noise transmission. Provide liquidtight flexible metal conduit for installation in exterior locations, moisture or humidity-laden atmosphere, corrosive atmosphere, water hose or spray wash-down operations and locations subject to seepage or dripping of oil, grease or water. Provide a green ground wire with FMC or LFMC conduit.

### 3.8 SUPPORTS

- A. Provide supports for raceways as specified in Section 260529: Electrical Hangers and Supports.
- B. All raceways systems shall be secured to building structures using specified fasteners, clamps and hangers spaced according to the NEC.
- C. Support single runs of conduit using one-hole pipe straps. Where run horizontally on walls in damp or wet locations, install "clamp backs" to space conduit off the surface.
- D. Multiple conduit runs shall be supported using "trapeze" hangers fabricated from specified construction channel, mounted to 3/8-inch diameter, threaded steel rods secured to building structures. Fasten conduit to construction channel with standard one-hole pipe clamps or the equivalent. Provide lateral seismic bracing for hangers.
- E. Individual 1/2" and 3/4" conduits installed above suspended ceilings may be attached to the ceiling's hanger wire using spring steel support clips provided that not more than two conduits are attached to any single support wire.
- F. Support exposed vertical conduit runs at each floor level, independent of cabinets or switches to which they run, by means of acceptable supports.
- G. Fasteners and supports in solid masonry and concrete:
  1. Use steel or malleable iron concrete inserts set in place prior to placing the concrete.
  2. After concrete installation:
    - a. Steel expansion anchors not less than ¼ inch bolt size and not less than 1-1/8 inch embedment.
    - b. Power set fasteners not less than ¼ inch diameter with depth of penetration not less than three inches.
    - c. Use vibration and shock resistant anchors and fasteners for attaching to concrete ceilings.
- H. Hollow masonry: Toggle bolts are permitted. Bolts supported only by masonry block are not acceptable.
- I. Metal structures: Use machine screw fasteners or other devices specifically designed and approved for the application.

**END OF SECTION**

## SECTION 26 05 33

### BOXES

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Work included: Labor, materials and equipment necessary to complete the installation required for the item specified under this Division, including but not limited to:
  - 1. Wall and ceiling outlet boxes.
  - 2. Pull and junction boxes.
- B. Related Work: Consult all other Sections, determine the extent and character of related Work and properly coordinate Work specified herein with that specified elsewhere to produce a complete installation.
  - 1. Division 08: Access doors. Wall and ceiling access doors.

##### 1.2 REFERENCES

- A. Comply with the latest edition of the following applicable Specifications and standards except as otherwise indicated or specified.
  - 1. American National Standards Institute/National Electrical Manufacturer Association:
    - ANSI/NEMA OS-1; Sheet-Steel Outlet Boxes, Device Boxes, Covers and Box Supports.
    - ANSI/NEMA OS-2; Nonmetallic Outlet Boxes, Device Boxes, Covers and Box Supports.
    - NEMA 250; Enclosures for Electrical Equipment (1000 volts maximum).
  - 2. Underwriters Laboratories (UL):
    - UL 50; Enclosures for Electrical Equipment.
    - UL 514A; Metallic Outlet Boxes.
    - UL 1773; Termination Boxes.

##### 1.3 SUBMITTALS

- A. Submit in accordance with the requirements of Section 260010: Basic Electrical Requirements, the following items:
  - 1. Data/catalog cuts for each product and component specified herein, listing all physical and electrical characteristics and ratings indicating compliance with all listed standards.
  - 2. Clearly mark on each data sheet the specific item(s) being submitted and the proposed application.
  - 3. Submit Manufacturer's installation instructions.

##### 1.4 QUALITY ASSURANCE

- A. All materials, equipment and parts comprising the units specified herein shall be new, unused and currently under production.
- B. Only products and applications listed in this Section may be used on the Project unless otherwise submitted.

#### PART 2 - PRODUCTS

##### 2.1 MANUFACTURERS

- A. Products furnished by the following Manufacturers shall be acceptable if in compliance with all features specified herein and indicated on the Drawings.
  - 1. Outlet and junction boxes:
    - a. Spring City Electrical Manufacturing Co.
    - b. Thomas & Betts Corp.
    - c. Raco, Inc.
  - 2. Cast boxes:
    - a. Appleton Electric Co.
    - b. Crouse-Hinds.
  - 3. Floor boxes:
    - a. Hubbell Inc.
    - b. Walker.
    - c. Raceway Components, Inc.

- 4. Pullboxes:
    - a. *Circle AW Products.*
    - b. *Hoffman Engineering Co.*
  - B. Substitutions: Under provisions of Section 260010: Basic Electrical Requirements.
- 2.2 OUTLET BOXES**
- A. Standard outlet box:
    - 1. Provide galvanized, one-piece die formed or drawn steel, knockout type box of size and configuration best suited to the application indicated on the Drawings.
    - 2. 4-inch square by 1-1/2 inch deep shall be minimum box size.
    - 3. ANSI/NEMA OS 1.
  - B. Concrete box:
    - 1. Provide galvanized steel, 4-inch octagon rings with mounting lugs, backplate and adapter ring as required.
    - 2. Select height as necessary to position knockouts above concrete reinforcing steel.
    - 3. ANSI/NEMA OS 1.
  - C. Tile box:
    - 1. Provide outlet boxes for installation in tile or concrete block walls.
    - 2. Standard outlet boxes with raised, square corners and device covers are acceptable.
    - 3. ANSI/NEMA OS 1.
  - D. Cast metal outlet body:
    - 1. Provide four inch round, galvanized cast iron alloy with threaded hubs and mounting lugs as required.
    - 2. Provide boxes with cast cover plates of the same material as the box and neoprene cover gaskets.
  - E. Conduit outlet body: Provide Cadmium plated cast iron alloy, oblong conduit outlet bodies with threaded conduit hubs and neoprene gasket, cast iron covers.
- 2.3 PULL AND JUNCTION BOXES**
- A. Sheet metal pull and junction box:
    - 1. Provide standard outlet or concrete ring boxes wherever possible; otherwise use minimum 16 gauge galvanized sheet metal, NEMA 1 boxes, sized to Code requirements with covers secured by cadmium plated machine screws located 6 inches on centers.
    - 2. ANSI/NEMA OS 1.
  - B. Cast metal pull and junction box: Provide standard cast malleable iron outlet or device boxes wherever possible; otherwise use cadmium plated, cast malleable iron boxes with bolt-on, interchangeable conduit hub plates with neoprene gaskets.
  - C. Flush mounted pullboxes and junction boxes: Provide overlapping covers with flush head cover retaining screws, prime coated.
- 2.4 FLOOR BOXES**
- A. Refer to Section 262726: Wiring Devices for floor mounted service boxes.

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. Contractor shall thoroughly examine Project site conditions for acceptance of box installation to verify conformance with Manufacturer and Specification tolerances. Do not commence with installation until all conditions are made satisfactory.

**3.2 PREPARATION**

- A. Install all outlet boxes flush with building walls, ceilings and floors except where boxes are installed in mechanical and electrical rooms, in cabinetry, above accessible ceilings or where exposed Work is called for on the Drawings.
- B. Locate pullboxes and junction boxes in concealed locations above removable ceilings or exposed in electrical rooms, utility rooms or storage areas.
- C. Install outlet boxes at the locations and elevations indicated on the Drawings or specified herein. Make adjustments to locations as required by structural conditions and to suit coordination requirements of other trades.
- D. Locate switch outlet boxes on the latch side of doorways unless otherwise indicated.
- E. Locate outlet boxes above hung ceilings having concealed suspension systems, adjacent to openings for removable recessed lighting fixtures.

- F. Do not install outlet boxes back-to-back, separate boxes by at least 6". In fire rated walls separate boxes by at least 24" and wall stud.
- G. Adjust position of outlet boxes in finished masonry walls to suit masonry course lines. Coordinate cutting of masonry walls to achieve neat openings for boxes.

### **3.3 INSTALLATION**

- A. Install boxes in accordance with Manufacturer's written instructions, as indicated on Drawings and as specified herein.
- B. Locate electrical boxes as indicated on Drawings and as required for splices, taps, wire pulling, equipment connections and Code compliance.
- C. Install junction or pullboxes 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 indicated on the Drawings.
- D. Install raised covers (plaster rings) on all outlet 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.
- E. Leave no unused openings in any box. Install close-up plugs as required to seal openings.
- F. Provide cast metal boxes with gasketed cast metal cover plates where boxes are exposed in damp or wet locations.
- G. Provide precast concrete boxes in exterior planting areas, walkways, roads etc.
- H. Provide an access panel in permanent ceiling or wall where boxes are installed and will be inaccessible.
- I. For boxes mounted in exterior walls, make sure that there is insulation behind outlet boxes to prevent condensation in boxes.
- J. 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.
- K. Use conduit outlet bodies to facilitate pulling of conductors or to make changes in conduit direction only. Do not make splices in conduit outlet bodies.
- L. Add additional sheet rock as necessary to maintain original fire rating of walls where boxes are installed.
- M. Install galvanized steel coverplates on boxes in unfinished areas, above accessible ceilings and on surface mounted outlets.

### **3.4 SUPPORTS**

- A. Provide boxes installed in metal stud walls with brackets designed for attaching directly to the studs or mount boxes on specified box supports.
- B. Mount boxes, installed in suspended ceilings of gypsum board or lath and plaster construction, to 16 gauge metal channel bars attached to main ceiling runners.
- C. Support boxes independently of conduit system.
- D. Support boxes, installed in suspended ceilings supporting acoustical tiles or panels, directly from the structure above wherever pendant mounted lighting fixtures are to be installed from the box.
- E. Support boxes, mounted above suspended acoustical tile ceilings, directly from the structure above.

**END OF SECTION**

## SECTION 260543

### UNDERGROUND DUCTS AND STRUCTURES

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Work included: Labor, materials and equipment necessary to complete the installation required for the item specified under this Division, including but not limited to:
  - 1. Underground conduits and ducts.
  - 2. Duct banks.
  - 3. Handhole and pullboxes.
  - 4. Other underground utility structures.
  - 5. Excavation, trenching and backfill.
- B. Related Work: Consult all other Sections, determine the extent and character of related Work and properly coordinate Work specified herein with that specified elsewhere to produce a complete installation.
  - 1. Division 31 - Earthwork: General requirements for Excavation and Backfill and related items for ducts, manholes, pullboxes and handholes.

##### 1.2 REFERENCES

- A. Comply with the latest edition of the following applicable Specifications and standards except as otherwise indicated or specified:
  - 1. Federal Specifications (FS):
    - FS WW-C-581; Specification for Galvanized Rigid Conduit.
    - FS W-C-1094A; Conduit and Conduit Fittings Plastic, Rigid.
  - 2. American Concrete Institute (ACI):
    - ACI 318; Building Code Requirements for Structural Concrete
  - 3. American Society for Testing And Materials (ASTM):
    - ASTM C31; Standard Practice for Making and Curing Concrete Test Specimens in the Field
    - ASTM C39; Test Method for Compressive Strength of Cylindrical Concrete Specimens
    - ASTM C172; Standard Practice for Sampling Freshly Mixed Concrete
    - ASTM C192; Practice for Making and Curing Concrete Test Specimens in the Laboratory
    - ASTM C231; Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
    - ASTM C1064; Standard Test Method for Temperature of Freshly Mixed Concrete
    - ASTM C1231; Standard Practice for Use of Unbonded Caps in Determination of Compressive Strength of Hardened Concrete Cylinder

##### 1.3 DEFINITIONS

- A. Duct: Electrical conduit and other raceway, either metallic or nonmetallic, used underground embedded in earth.
- B. Duct bank: Two or more conduits or other raceway installed underground in same trench or concrete envelope.
- C. Handhole: An underground junction box in a duct or duct bank.
- D. Manhole: An underground utility structure, large enough for a person to enter, connecting with ducts to afford facilities for installing and maintaining cables.
- E. Vault: An underground utility structure, large enough for a person to enter, connecting with ducts to afford facilities for installing, operating and maintaining equipment and wiring.

##### 1.4 SUBMITTALS

- A. Submit in accordance with the requirements of Section 260010: Basic Electrical Requirements, the following items:
  - 1. Data/catalog cuts for each product and component specified herein, listing all physical and electrical characteristics and ratings indicating compliance with all listed standards.

2. Clearly mark on each data sheet the specific item(s) being submitted and the proposed application.
3. Submit concrete mix thermal resistivity report with initial conditions and thermal dryout curves (Resistivity vs. Water Content).
4. Submit Manufacturer's installation instructions.
5. Complete bill of material listing all components.
6. Coordination Drawings showing duct profiles and coordination with other utilities and underground structures. Include plans and section drawn to accurate scale.

## 1.5 QUALITY ASSURANCE

- A. All materials, equipment and parts comprising the units specified herein shall be new, unused and currently under production.
- B. Only products and applications listed in this Section may be used on the Project unless otherwise submitted and approved.
- C. Precast concrete vaults shall be designed and fabricated by an experienced and acceptable precast concrete manufacturer. The manufacturer shall have been regularly and continuously engaged in the manufacture of precast concrete units similar to that indicated in the project specifications or drawings for at least 10 years.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Products furnished by the following Manufacturers shall be acceptable if in compliance with all features specified herein and indicated on the Drawings.
  1. Underground precast concrete utility structures:
    - a. Oldcastle Enclosure Solutions.
    - b. Jensen Precast.
- B. Substitution: Under provisions of Section 260010: Basic Electrical Requirements.

### 2.2 CONDUIT AND DUCT

- A. Refer to 16131: Conduit.
- B. Duct supports: Rigid PVC spacers selected to provide minimum duct spacing and concrete cover depths, while supporting ducts during concrete pour.
- C. Duct sealing compound: Non-hardening, safe for human skin contact, not deleterious to cable insulation, workable at temperatures as low as 35 degree F, withstands temperature of 300 degrees F without slump and adheres to clean surfaces of plastic ducts, metallic conduits, conduit coatings, concrete, cable sheaths and jackets, etc.

### 2.3 PULLBOXES AND HANDHOLES

- A. Construction: High densities precast reinforced concrete box, extension, base and cover. Furnish box with end and side knockouts and non-settling shoulders. Cover shall have hold-down bolts and two lifting eyes.
- B. Size: As indicated on the Drawings.
- C. Cover markings: Covers shall read "ELECTRICAL" or "SIGNAL" as appropriate.
- D. Rated covers: Use cast iron lid with H20 traffic rating when subject to vehicular traffic.

### 2.4 CONSTRUCTION MATERIALS

- A. Mortar: Conform to ASTM C270, Type M, except for quantities less than 2.0 Cu. Ft., where packaged mix complying with ASTM C387, Type M may be used.
- B. Concrete: Conform to Division 03: Cast-in-place concrete for concrete and reinforcing.
  1. Strength: 3,000-PSI minimum 28-day compressive strength.
  2. Aggregate for duct encasement: 3/8-inch maximum size, 4 sack mix.
  3. Dry thermal resistivity (Rho): 54 or less with 0% water content.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Contractor shall thoroughly examine Project site conditions for acceptance of duct and manhole installation to verify conformance with Manufacturer and Specification tolerances. Do not commence with installation until all conditions are made satisfactory.

### 3.2 EARTHWORK

- A. Excavation and backfill: Conform to Division 31, Earthwork.

- B. Excavation for underground electrical structures: Conform to elevations and dimensions indicated within a tolerance of plus or minus 0.10 foot; plus a sufficient distance to permit placing and removal of concrete formwork, installation or services, other construction and for inspection.
  - 1. Excavate, by hand, areas within drip-line of large trees. Protect the root system for damage and dry-out. Maintain moist conditions for root system and over exposed roots with burlap. Paint root cuts of 1 inch in diameter and larger with emulsified asphalt tree paint.
  - 2. Take care not to disturb bottom of excavation. Excavate by hand to final grade just before concrete reinforcement is placed.
- C. Trenching: Excavate trenches for electrical installation as follows:
  - 1. Excavate trenches to the uniform width, sufficiently wide to provide ample working room and a minimum of 6 to 9 inches clearances on both sides of raceways and equipment.
  - 2. Excavate trenches to depth indicated or required.
  - 3. Limit the length of open trench to that in which installations can be made and the trench backfilled within the same day.
  - 4. Where rock is encountered, carry excavation below required elevation and backfill with a layer of crushed stone or gravel prior to installation of raceways and equipment. Provide a minimum of 6 inches of stone or gravel cushion between rock bearing surface and electrical installations.
- D. Backfilling and filling: Place soil materials in layers to required sub-grade elevations for each area classification, using materials and methods specified in Division 31: Earthwork.
  - 1. Under building slabs, use drainage fill materials.

### 3.3 CONDUIT AND DUCT INSTALLATION

- A. Install duct lines in accordance with Manufacturer's written instructions, as indicated on the Drawings and as specified herein.
- B. Application:
  - 1. Direct burial ducts: Schedule 40, minimum 24-inches below finished grade.
  - 2. Below building slab-on-grade: Schedule 40, minimum 4-inches below bottom of slab except that bends and penetrates through floor slab shall be PVC coated galvanized rigid steel.
  - 3. Below roads and paved surfaces:
    - a. Schedule 80, minimum 36-inches below finished grade.
  - 4. Penetrations of building and equipment slabs: PVC insulated rigid steel.
- C. Slope duct to drain towards manholes and handholes and away from building and equipment entrances. Pitch not less than 4-inches per 100-feet. Curved sections in duct lines shall consist of long sweep bends with a minimum radius of 25-feet in the horizontal and vertical directions. The use of manufactured bends is limited to building entrances and equipment stub-ups.
- D. Underground conduit stub-ups to inside of building and exterior equipment shall be PVC insulated rigid steel.
- E. Make joints in ducts and fittings watertight according to Manufacturer's instructions. Stagger couplings so those of adjacent ducts do not lie in the same plane.
- F. Terminate duct lines at manholes and handholes with end bells spaced 10-inches on center for 5-inch ducts and varied proportionately for other duct sizes. Change from regular spacing to end-bell spacing 10-feet from the end bell without reducing duct line slope and without forming trap in the line. Grout end bells into manhole walls from both sides to provide watertight entrance.
- G. Separation between direct buried duct lines shall be 3-inches minimum for like systems and 12 inches minimum between power and signal ducts.
- H. Provide #12 AWG (or larger) copper clad steel insulated solid copper, or approved equal trace wires a minimum of 6" above all underground nonmetallic ducts and edges of all duct banks for locating. Contractor will be responsible for accurately documenting the width and depth of each underground duct and duct bank on their As-Built drawings.
- I. For direct burial installations install continuous warning strip of heavy gage plastic imprinted "electrical ducts below", approximately 12-inch wide at 12-inches above ducts.

J. Mandrel all ducts upon completion of installation and prior to pulling cables.

**3.4 HANDHOLE AND PULL BOX INSTALLATION**

- A. Install handholes in accordance with Manufacturer's written instructions, as indicated on Drawings and as specified herein.
- B. Handholes shall be installed flush with finished grade or surface. Install on a level 6-inch bed of well-tamped gravel or crushed stone.
- C. Orientation of handholes shall be coordinated in advance with Landscape Architect and arranged to minimize connecting duct bends and deflections.

**3.5 CLEANING**

- A. Pull brush through full length of ducts. Use round bristle brush with a diameter 1/2-inch greater than internal diameter of duct.
- B. Clean internal surfaces of handholes and manholes including sump. Remove foreign material.

**END OF SECTION**



## SECTION 26 05 53

### ELECTRICAL IDENTIFICATION

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Work included: Labor, materials and equipment necessary to complete the installation required for the item specified under this Division, including but not limited to:
  - 1. Electrical equipment nameplates.
  - 2. Property Identification Labels for Equipment.
  - 3. Panelboard directories.
  - 4. Wire and cable identification.
  - 5. Buried electrical line warnings.
  - 6. Junction box identification.
  - 7. Warning and caution signs.
  - 8. Inscribed device coverplates.
- B. Related Work: Consult all other Sections, determine the extent and character of related Work and properly coordinate Work specified herein with that specified elsewhere to produce a complete installation.
  - 1. Division 09: Painting.

##### 1.2 SUBMITTALS

- A. Submit in accordance with the requirements of Section 260010: Basic Electrical Requirements, the following items:
  - 1. Data/catalog cuts for each product and component specified herein.
  - 2. Schedules for nameplates to be furnished.
  - 3. Sample of each type of label, nameplate, tag, etc. Samples shall be reviewed and approved by the University prior to release.

#### PART 2 - PRODUCTS

##### 2.1 MANUFACTURERS

- A. Products furnished by the following Manufacturers shall be acceptable if in compliance with all features specified herein and indicated on the Drawings.
  - 1. Conduit and wire markers:
    - a. Thomas & Betts Corp.
    - b. Brady.
    - c. Griffolyn.
  - 2. Inscription Tape:
    - a. Kroy.
    - b. Merlin.
- B. Substitutions: Under provisions of Section 260010: Basic Electrical Requirements.

##### 2.2 NAMEPLATES

- A. Type NP: Engraved, plastic laminated labels, Signs and Instruction Plates. Engrave stock melamine plastic laminate 1/16-inch minimum thickness for signs up to 20 square inches or 8 inches in length; 1/8 inch thick for larger sizes. Engraved nameplates shall have white letters and be punched for mechanical fasteners.
- B. Color and letter height as specified in Part 3: Execution.

##### 2.3 LEGEND PLATES

- A. Type LP: Die-stamped metal legend plate with mounting hole and positioning key for panel mounted operator devices, i.e. motor control pilot devices, hand-off-auto switches, reset buttons, etc.
- B. Stamped characters to be paint filled.

##### 2.4 BRASS TAGS

- A. Type BT: Metal tags with die-stamped legend, punched for fastener.
- B. Dimensions: 2" diameter 19 gauge.

##### 2.5 PROPERTY IDENTIFICATION LABELS FOR EQUIPMENT

- 1. Provide labels for equipment tracking per University Standards.

## **2.6 PANELBOARD DIRECTORIES (400 AMP OR LESS)**

- A. Directories: A 6" x 8" minimum size circuit directory frame and card with clearplastic covering shall be provided inside the inner panel door.
- B. Circuit numbering: Starting at the top, odd numbered circuits in sequence down the left hand side and even numbered circuits down the right hand side. Multi-section panelboards shall have continuous consecutive circuit numbers, i.e. Section 1 (circuit numbers 1-42), Section 2 (circuit numbers 43-84), Section 3 (circuit numbers 85-126).

## **2.7 WIRE AND TERMINAL MARKERS**

- A. Provide self-adhering, pre-printed, machine printable or write-on, self-laminating vinyl wrap around strips. Blank markers shall be inscribed using the printer or pen recommended by Manufacturer for this purpose.

## **2.8 UNDERGROUND CONDUIT MARKER**

- A. 6-inch wide, yellow polyethylene tape, with continuous black imprinting reading "Caution - Buried Electric Line Below".

## **2.9 INSCRIBED DEVICE COVERPLATES**

- A. Coverplate material shall be as specified in Section 262726: Wiring Devices.
- B. Methods of inscription: (Unless otherwise noted)
  - 1. Engraving:
    - a. Thermoplastic engraved legend, white background with black letter.
    - b. 0.5" high x 1.5" wide label with 0.25" letters.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Contractor shall thoroughly examine Project site conditions for acceptance of identification device installation to verify conformance with Manufacturer and Specification tolerances. Do not commence with installation until all conditions are made satisfactory.

### **3.2 NAMEPLATES**

- A. Installation:
  - 1. Degrease and clean surfaces to receive nameplates.
  - 2. Install nameplates parallel to equipment lines.
  - 3. Secure nameplates to equipment fronts using machine screws.
- B. Provide type 'NP' color coded nameplates that present, as applicable, the following information:
  - 1. Equipment or device designation:
    - a. Equipment designations shall conform to the following:
      - 1) Power source:
        - a) Normal - \_\_\_
        - b) Emergency – E
        - c) UPS – U
      - 2) Floor number where equipment is located – 3
      - 3) Equipment description:
        - a) 277/480 volt Main switchboard – MDBH
        - b) 277/480 volt distribution board –DBH
        - c) 277/480 volt panelboard – H
        - d) 120/208 volt distribution board – DBL
        - e) 120/208 volt panelboard – L
        - f) Transformer – TX
      - 4) Equipment designation – B
    - b. Example: E2DBHA
      - 1) Emergency source.
      - 2) 2<sup>nd</sup> floor.
      - 3) 277/480 volt distribution board.
      - 4) Board designation A
  - 2. Amperage, KVA or horsepower rating, where applicable.
  - 3. Voltage or signal system name.
  - 4. Source of power or control.
  - 5. Examples:

- a. Boards: E2DBHA; 1200A; 277/480V, 3PH, 4W; Served from: ATS1A
- b. Transformers: ETX2A; 150KVA; 480V pri. - 120/208V, 3PH, 4W sec.; Served from: E2DBHA; Load Served: E2LA
- c. Disconnects or Individual Motor Starters: EF-1; 20HP; 480V,3PH,3W; Served from E2DBHA
- d. Signal: STB3C; Public Address System; Served from STB2C
- C. Nameplates for power system distribution equipment and devices are to be black.
- D. Nameplates for signal systems equipment and devices are to be black except as follows:
  - 1. Fire alarm and life safety - Red.
  - 2. Security/card access/CCTV systems - Green.
  - 3. Clock, intercom, sound, MATV, CATV - Blue.
- E. Minimum letter height shall be as follows:
  - 1. For panelboards, switchboards, battery panels motor control center, etc.: ½ inch letters to identify equipment designation. Use ¼ inch letters to identify voltage, phase, wires, etc.
  - 2. For individual circuit breakers, switches and motor starters in panelboards, switchboards and motor control centers use 3/8-inch letters to identify equipment designation. Use 1/8-inch letters to identify all other.
  - 3. For individual mounted circuit breakers, disconnect switches, enclosed switches and motor starters use 3/8-inch letters to identify equipment designation. Use 1/8" letters to identify all other.
  - 4. For transformers use 1/2 inch letters to identify equipment designation. Use ¼ inch letters to identify primary and secondary voltages, etc.
  - 5. For equipment cabinets, terminal cabinets, control panels and other cabinet enclosed apparatus use 3/8-inch letters to identify equipment designation.

### 3.3 LEGEND PLATES

- A. Provide panel-mounted operators devices such as pilot lights, reset buttons, "HAND-OFF-AUTO" switches, etc.

### 3.4 BRASS TAGS

- A. Provide type BT tags for individual ground conductors to exposed ground bus indicating connection i.e. "UFER", "Cold water bond", etc.
- B. Provide tags for all feeder cables in underground vaults and pull boxes.
- C. Provide tags for empty conduits in underground vault, pull boxes and stubs.

### 3.5 PANELBOARD DIRECTORIES (400 AMP OR LESS)

- A. Provide typewritten directories arranged in numerical order denoting loads served by room number or area for each circuit.
- B. Verify room numbers or area designation with Project Manager.
- C. Mount panelboard directories in a minimum 6" x 8" metal frame under clear plastic cover inside every panelboard.

### 3.6 WIRE AND CABLE IDENTIFICATION

- A. Provide wire markers on each conductor (grounded and ungrounded conductors) in panelboards, pull boxes, outlet and junction boxes and at load connection. Identify with branch circuit or feeder number for power and lighting circuits and with control wire number as indicated on equipment Manufacturer's Shop Drawings for control wiring.

### 3.7 UNDERGROUND CONDUIT MARKERS

- A. During trench backfilling, for exterior underground power, signal and communications lines, install continuous underground plastic line marker, located directly above line at 6 to 8 inches below finished grade. Where multiple lines installed in a common trench or concrete envelope, do not exceed an overall width of 16 inches; install a single line marker.

### 3.8 JUNCTION BOX IDENTIFICATION

- A. Concealed Locations: The cover of junction, pull and connection boxes for both power and signal systems, located above suspended ceilings and below ceilings in non-public areas, shall be clearly marked with a permanent ink felt pen. Identify the circuit(s) (panel designation and circuit numbers) contained in each box, unless otherwise noted or specified.
- B. Exposed Locations: Provide a thermoplastic engraved legend with white letters on black background on the cover of junction, pull and connection boxes for both power and signal

systems. Identify the circuit(s) (panel designation and circuit numbers) contained in each box, unless otherwise noted or specified. Adhere the legend to the cover utilizing 30 year silicone adhesive.

**3.9 WARNING, CAUTION AND INSTRUCTION SIGNS**

- A. Provide warning, caution or instruction signs where required by NEC, where indicated or where reasonably required to assure safe operation and maintenance of electrical systems and of the items to which they connect. Install engraved plastic laminated instruction signs with approved legend where instructions or explanations are needed for system or equipment operation. Install butyrate signs with metal backing for outdoor items.
- B. Emergency Operating Signs: Install engraved laminate signs with white letters on red background with minimum 3/8 inch high lettering for emergency instructions on power transfer, load shedding or other emergency operations.
- C. Elevator Machine Rooms(s): Provide warning sign for each elevator controller disconnect to read "Warning - Part of the Control Panel is not De-energized by this Switch."
- D. Elevator car light and fan switch: Provide signage indicating elevator number serving and function of each switch.

**3.10 INSCRIBED DEVICE COVERPLATE**

- A. General:
  - 1. Lettering type: Helvetica, 0.25" high.
  - 2. Color of characters shall be black on white.
  - 3. Locate the top of the inscription 1/2" below the top edge of the coverplate.
  - 4. Inscription shall be centered and square with coverplate.
- B. Provide inscribed legend, , as applicable, the following information:
  - 1. Panel and circuit designation. For example, 1LA 2 (Panel 1LA, circuit 2).
- C. Application:
  - 1. Provide inscribed legend on coverplates for devices as outlined below:
    - a. Receptacles.
    - b. Outlets in surface raceways.
    - c. Multi-ganged (four or more) switch arrangement.
    - d. Special purpose switches, i.e. projection screens, shades, exhaust fans, etc.
    - e. Telecommunication outlets.
  - 2. Engraved legend installation:
    - a. Affix legend to coverplate using 30 year silicone adhesive.

**END OF SECTION**

## SECTION 26 56 00

### EXTERIOR LIGHTING

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Work included: Labor, materials and equipment necessary to complete the installation required for the item specified under this Division, including but not limited to:
  - 1. Site lighting fixtures.
  - 2. Diodes.
  - 3. LED Drivers.
  - 4. Pole standards.
- B. Related Work: Consult all other Sections, determine the extent and character of related Work and properly coordinate Work specified herein with that specified elsewhere to produce a complete installation.
  - 1. Division 03: Cast-in-place concrete. Light pole foundations and backboxes.
  - 2. Division 05: Miscellaneous. Fittings, brackets, backing supports, rods, etc. as required for support and bracing of lighting fixtures.
  - 3. Division 09: Painting. Field painting of lighting fixtures.

##### 1.2 REFERENCES

- A. Comply with the latest edition of the following applicable Specifications and standards except as otherwise indicated or specified:
  - 1. Underwriters Laboratories, Inc. (UL):
    - UL 66; Fixture Wire.
    - UL 1598; Luminaires.
    - UL 2108; Low Voltage Lighting Systems.
  - 2. Illumination Engineering Society of North America (IESNA):
    - IESNA LM-79-2008; Approved Method for Electrical and Photometric Measurements of Solid-State Lighting Products.
    - IESNA LM-80-2008; Approved Method for Measuring Lumen Maintenance of LED Light Sources.
  - 3. Restriction of Hazardous Substances in LED (RoHS):
    - EU RoHS; Directive 2002/95/EC Restriction of Hazardous Materials.

##### 1.3 SUBMITTALS

- A. Items specified under this Section and noted in fixture schedule are Priority 1. Refer to Section 260010: Basic Electrical Requirements for specific Priority 1 requirements.
- B. Submit in accordance with the requirements of Section 260010: Basic Electrical Requirements, the following items:
  - 1. Data/catalog cuts for each product and component specified herein, listing all physical and electrical characteristics and ratings indicating compliance with all listed standards.
  - 2. Clearly mark on each data sheet the specific item(s) being submitted and the proposed application.
  - 3. Independent Testing Laboratories, Inc. or equal, photometric test report for each luminaire type and lamp combination listed on the fixture schedule. Test reports shall be based on Illuminating Engineering Society published test procedures and shall contain candlepower distribution curves in five lateral planes for fixtures with asymmetric distributions and fixture luminance data for vertical angles above 45 degrees from nadir.
  - 4. Shop Drawings:
    - a. Where noted in the Fixture Schedule, submit Shop Drawings of special mounting details, including fixture support, attachment methods, etc. Shop Drawings shall include plan and section views indicating all structural members being used for support.
    - b. Where noted in the Fixture Schedule, submit Shop Drawings from Manufacturer detailing custom lighting fixtures indicating dimensions, weights, methods of field assembly, components, features, accessories, methods of support, etc.

5. Samples of fixture finish where "FINISH AS SELECTED BY THE ARCHITECT" is indicated on the Fixture Schedule. The Engineer or Architect must approve samples in writing prior to ordering. With each submitted sample provide the paint formula used to achieve the color finish.
6. Where noted in the Fixture Schedule, provide samples for verification purposes of specific individual fixtures.
7. Submit Manufacturer's installation instructions.
8. Complete bill of material listing all lighting fixtures and components.
9. Warranty.

**1.4 OPERATION AND MAINTENANCE MANUAL**

- A. Supply operation and maintenance manuals in accordance with the requirements of Section 260010: Basic Electrical Requirements, to include the following:
  1. A detailed explanation of the operation of the system.
  2. Instructions for routine maintenance.
  3. Pictorial parts list and part numbers.
  4. Telephone numbers for the authorized parts and service distributors.

**1.5 QUALITY ASSURANCE**

- A. All materials, equipment and parts comprising the units specified herein shall be new, unused and currently under production.
- B. Only products and applications listed in this Section may be used on the Project unless otherwise submitted.

**1.6 PRODUCT DELIVERY, STORAGE AND HANDLING**

- A. Delivery: Lighting fixtures shall not be delivered to the Project site until protected storage space is available. Storage outdoors covered by rainproof material is not acceptable. Equipment damaged during shipment shall be replaced and returned to Manufacturer at no cost to Owner.
- B. Storage: Store in a clean, dry, ventilated space free from temperature extremes. Maintain factory wrapping or provide a heavy canvas/plastic cover to protect units from dirt, water, construction debris and traffic. Provide heat where required to prevent condensation.
- C. Handling: Handle in accordance with Manufacturer's written instructions. Be careful to prevent internal component damage, breakage, denting and scoring. Damaged units shall not be installed. Replace damaged units and return equipment to Manufacturer.

**1.7 WARRANTY**

- A. Units and components offered under this Section shall be covered by a 5 year parts and labor warranty for malfunctions resulting from defects in materials and workmanship. Warranty shall begin upon acceptance by the Owner.

**PART 2 - PRODUCTS**

**2.1 MANUFACTURERS**

- A. Products furnished by the following Manufacturers shall be acceptable if in compliance with all features specified herein and indicated on the Drawings.
  1. Lighting fixtures: Refer to Fixture Schedule.
  2. LEDs & LED drivers: As provided by the light fixture manufacturer, and meeting the requirements herein.
- B. Substitutions: Under provisions of Section 260010: Basic Electrical Requirements.

**2.2 FIXTURES**

- A. Refer to the fixture schedule on the plans.
- B. Standard lumen output shall meet or exceed the State of California Title 24 Energy Code for high efficiency luminaires.
- C. Luminaires shall not draw power in the off state. Luminaires with integral occupancy, motion, photo-controls, or individually addressable luminaires with external control and intelligence are exempt from this requirement. The power draw for such luminaires shall not exceed 0.5 watts when in the off state.
- D. Luminaire manufacturers shall adhere to device manufacturer guidelines, certification programs, and test procedures for thermal management
- E. Luminaires shall be fully accessible from below ceiling plane for changing drivers, power supplies and arrays

- F. The finish of all fixtures and trim shall be submitted to and approved by the Architect prior to ordering.
  - G. All standard fixtures must bear UL label. Attaching of labels after delivery of fixtures is not acceptable.
  - H. All labels affixed to the fixture shall be in a location not visible from normal viewing angles.
  - I. Ferrous mounting hardware and accessories shall be finished using either a galvanic or phosphate primer/baked enamel process to prevent corrosion and discoloration of adjacent materials.
  - J. Fasteners shall be manufactured of galvanized steel.
  - K. Fixtures shall be free of light leaks and shall be designed to provide sufficient ventilation of lamps and ballasts, including vent holes where required.
  - L. All sheet metal Work shall be free from tool marks and dents and shall have accurate angles bent as sharp as compatible with the gauges of the required metal. All intersections and joints shall be formed true and of adequate strength and structural rigidity to prevent any distortion after assembly. All surfaces shall be finished so as to eliminate all exposed sharp edges. All mitered corners or joints shall be accurately aligned with abutting intersecting members. Sheet metal Work shall be properly fabricated so that planes will not deform (i.e. become concave or convex) due to normal expected ambient and operating conditions.
  - M. Wiring channels and LED mountings shall be rigid and accurately constructed.
- 2.3 LIGHT EMITTING DIODES (LED):
- A. Refer to the Fixture Schedule for size and type of LED lamps required.
  - B. All diodes shall come from the same manufacturer and carry the same bin number.
  - C. All diodes shall be tested and tuned for the optimal Kelvin color point.
  - D. Color correlated temperature: No greater than 3000K
  - E. Minimum CRI (Color Rendering Index): 70
  - F. Diodes shall have a minimum life of 50,000 hours and maintain at least 70% of initial lamp lumens throughout this period.
  - G. LED fixture components shall be free of all toxic materials to include lead, cadmium and mercury, and shall be RoHS compliant.
  - H. Groups of three or more diodes in a single housing shall be tested for even distribution.
  - I. All LED fixtures shall have an IES formatted electronic photometric report.
  - J. Comply with IES LM-79-08 Approved Method for measuring lumen maintenance of LED light sources.
  - K. Comply with IES LM-80-08 Approved Method for electrical and photometric measurement of SSL product.
  - L. LED arrays shall be sealed, high performance, long life type; minimum 70% rated output at 50,000 hours.
  - M. LEDs shall be "Bin No. 1" quality.
  - N. The LED light source shall be fully dimmable with use of compatible dimmers switch designated for low voltage loads.
- 2.4 LED DRIVERS:
- A. LED drivers shall be integral to fixture housing or remotely located, when specified, within 15 feet of diode assembly.
  - B. Drivers shall have a minimum life of 50,000 hours and maintain at least 70% of initial lamp lumens for that period.
  - C. Typical LED drivers shall be electronic, 0-10V dimming.
  - D. Drivers shall be solid state and accept 120 through 277 VAC at 60 Hz input.
  - E. Power Factor: 0.90 or higher.
  - F. Maximum driver case temperature not to exceed driver manufacturer recommended insitu operation.
  - G. Output operating frequency: 60Hz.
  - H. Interference: EMI and RFI compliant with FCC 47 CFR Part 15.
  - I. Total Harmonic Distortion Rating: 20% Maximum.
  - J. Meet electrical and thermal conditions as described in LM-80 Section 5.0. 7.
- 2.5 FIXTURE TRANSFORMERS
- A. Low voltage transformers:

1. Low voltage transformers shall be encapsulated, core and coil construction, for use in outdoor location, unless otherwise noted.
2. Primary voltage shall be as noted in Fixture Schedule, secondary voltage 12 VAC, unless otherwise noted.
3. Where transformers are integral to the fixture, they shall be accessible.
4. Sound rating shall be the lowest available. Replace excessively noisy transformers at no cost to the Owner.

## **2.6 POLES**

- A. Wind-load strength: 80 mph and 1.3 gust factor for total support assembly, including pole, base and anchorage, where used, to carry the fixtures, supports and appurtenances at the indicated heights above grade without deflection or whipping.
- B. Arm, bracket and tenon mount materials: Match the poles.
- C. Mountings, fastenings and appurtenances: Corrosion-resistant components compatible with the poles and fixtures that will not cause galvanic action at contact points. Provide mountings that will correctly position the luminaire to provide the indicated light distribution.
- D. Pole shafts: Round straight. Round tapered. Square straight. Square tapered.
- E. Handhole: Provide handhole and cover near base of pole shaft for access to wiring compartment.
- F. Grounding lug: Provide grounding lug for grounding conductor with access through handhole.
- G. Pole bases: Anchor type with galvanized steel hold-down or anchor bolts, leveling nuts and bolt covers.  
Aluminum poles: Cast 356-T6 alloy. Conform to ASTM B 429, "Standard Specification of Aluminum-Alloy Extruded Structural Pipe and Tube." Tapered from 5" diameter at the bottom to 7" at top. Pole wall thickness to be minimum 0.156" thick. Provide access handhole in pole wall.
- H. Pole-top tenons: Fabricated to support the fixture indicated and securely fastened to the pole top.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Contractor shall thoroughly examine Project site conditions for acceptance of site lighting fixture installation to verify conformance with Manufacturer and Specification tolerances. Do not commence with installation until all conditions are made satisfactory.

### **3.2 PREPARATION**

- A. Consult Architectural or Landscape Drawings for details of ceiling and wall construction, finish, landscape features and other applicable details and provide backboxes and trims suitable for the particular type of ceiling or wall at each location.

### **3.3 INSTALLATION**

- A. Install lighting fixtures in accordance with Manufacturer's written instructions, as indicated on the Drawings and as specified herein.
- B. Contractor shall be responsible for all supports, hangers and hardware necessary for a complete installation.
- C. Fixtures shall be plumb, level, square, in straight lines and without distortion. Remedy light leaks that may develop after installation of recessed or enclosed fixtures.
- D. Turn over Project with all lamps in new and operating condition. Lamps that are burned less than 100 hours at Project closeout are considered new.

### **3.4 FIXTURE SUPPORTS**

- A. Support outlet boxes as specified in Section 260533: Boxes. Provide all boxes with grounding pigtail.

### **3.5 IDENTIFICATION SYSTEM**

- A. All junction box coverplates for the lighting branch circuit system shall be clearly marked with permanent black ink felt pen identifying the branch circuit (both panel designation and circuit number) contained in the box.

### **3.6 INSTALLATION OF POLES**

- A. General: Store poles on decay-resistant treated skids at least 1 ft. above grade and vegetation. Support pole to prevent distortion and arrange to provide free air circulation.



- B. Metal poles: Retain factory-applied pole wrappings until just before pole installation. For poles with nonmetallic finishes, handle with web fabric straps.
  - C. Pole installation: Use fabric web slings (not chain or cable) to raise and set poles.
- 3.7 CONCRETE FOUNDATIONS**
- A. Construct concrete foundations with 3000 pound, 28 day concrete conforming to Division 03, Section "Cast-In-Place Concrete." Comply with details and Manufacturer's recommendations for reinforcing, anchor bolts, nuts and washers.
- 3.8 FIELD QUALITY CONTROL**
- A. Visual and mechanical inspection:
    - 1. Inspect for physical damage, defects, alignment and fit.
    - 2. Perform operational test of each lighting fixture after installed, circuited and energized.
    - 3. Perform emergency operational test of all lighting fixtures connected to emergency circuiting by interrupting normal power source.
  - B. Contractor shall replace at no cost to the Owner all equipment which is found defective or do not operate within factory specified tolerances.
  - C. Field mock-up: Where noted in the Fixture Schedule, the Contractor shall provide sample(s) for use in full-size field mockup of specific individual fixtures. The Contractor shall allow time in the bid and be responsible prior to installation of the light fixtures, for installing a sample fixture on the Project for review. This mock-up will be required to be coordinated and reviewed with the Owner's Representative and the Architect or Engineer. The Contractor shall be responsible for providing the labor and materials for the field mock-up including, but not limited to, special rigging or scaffolding and adjusting fixtures in field, as directed by the Architect or Engineer.
- 3.9 ADJUSTING**
- A. Field aiming: Where noted in the Fixture Schedule, the Contractor shall allow time in the bid and be responsible upon the installation of the light fixtures, for aiming and lamping fixtures as described in the fixture schedule. This aiming will be performed at night under the direction of the Owner's Representative and the Architect or Engineer. The Contractor shall be responsible for providing the labor and materials for field aiming. This will include, but not limited to, special rigging or scaffolding, adjusting fixtures in field, testing of various lamps with each fixture and/or testing of various lenses or louvers with fixtures, as directed by the Architect or Engineer.
- 3.10 CLEANING**
- A. Clean lighting fixtures prior to Project closeout in accordance with Manufacturer's recommended materials and methods.

**END OF SECTION**

## **SECTION 31 10 00**

### **SITE CLEARING**

#### **PART 1 - GENERAL**

##### **1.1 SECTION INCLUDES**

- A. Specifications for clearing, grubbing and disposing of vegetation, including bushes, brush, trees, stumps, fallen timber, logs, roots, rubbish, refuse trash, and debris within the indicated site limits.
- B. Protection from injury or defacement of trees and other vegetation and objects indicated to be preserved.
- C. Removal, salvage, or other disposition of slabs, footings and foundations; existing pavement, curbs and gutters, sidewalks, headwalls, walls, and steps; utility service facilities; guardrail and posts, highway and street signs and fences; and other miscellaneous structures and site improvements which interfere with construction.

##### **1.2 REFERENCES**

- A. California Code of Regulations, Title 8, Chapter 4, Subchapter 4 - Construction Safety Orders
- B. California Code of Regulations, Title 24, Part 2, California Building Code, Chapter 33, Site Work, Demolition and Construction
- C. State of California, Department of Transportation (Caltrans), Standard Specifications

##### **1.3 JOBSITE CONDITIONS**

- A. Stockpile salvaged material in a secured location.
- B. Clear and restore areas used for the Contractor's convenience. Restore such areas to their original condition, and provide mulching, seeding and planting as required.
- C. Protect survey markers and monuments, existing improvements, and adjacent properties from removal and damage.
- D. Give written notices to utility companies and municipal departments requesting discontinuance of services to areas which will be affected by the site preparation work.

##### **1.4 CARE OF EXISTING TREES**

- A. Trees and plants indicated on the Contract Drawings to remain and to be preserved shall be protected from damage by constructing suitable barriers or fences at, or near, the driplines of the trees and plants. Vehicles, equipment, materials, and debris shall not be placed or parked in these areas or under trees to remain.

- B. Feed, water, and maintain protected trees and plants in a healthy, growing condition during the construction period.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS AND EQUIPMENT**

- A. Furnish all materials, tools, equipment, facilities, and services as required for performing site clearing and preparation work.

## **PART 3 - EXECUTION**

### **3.1 CLEARING AND GRUBBING**

- A. Perform clearing and grubbing as necessary to remove vegetation and objectionable material from the site. Clear the site within the limits indicated, and remove cleared materials and debris from the site.
- B. Remove stumps and roots completely in excavation areas and under embankments where the original ground level is within 3.5 feet of subgrade or slope of embankments. In embankment areas, where the original ground level is more than 3.5 feet below the subgrade or slope of embankment, cut off trees, stumps, and brush to within six inches of the ground.
- C. Do not start earthwork operations in areas where clearing and grubbing are not complete, except that stumps and large roots may be removed concurrently with excavation.
- D. Where the work includes requirements for wood chip mulch, acceptable material from clearing and grubbing activities may be used to produce such mulch.

### **3.2 TREE BRANCHES**

- A. Remove tree branches overhanging trackways, roadways, and other designated areas of the site to within 20 feet of finish grade. Cut off branches neatly and close to the tree boles. Remove other branches as necessary to present a balanced appearance. Treat scars resulting from tree branch removal with a heavy coat of an approved asphaltic tree paint.

### **3.3 REMOVAL**

- A. Remove existing pavements, structures, and site improvements which interfere with construction, where demolition is not indicated.
- B. Remove walls and masonry construction to a minimum depth of two feet below existing ground level in areas where such items do not interfere with construction.
- C. Slabs may be broken for drainage and left in place where they are not detrimental to the structural integrity of the fill or structure to be placed above.

### **3.4 DISPOSAL OF REMOVED MATERIALS AND DEBRIS**

- A. Dispose of removed materials, waste, trash, and debris in a safe, acceptable manner, in accordance with applicable laws and ordinances and as prescribed by authorities having jurisdiction.
- B. Burying of trash and debris on the site will not be permitted. Burning of trash and debris at the site will not be permitted.
- C. Remove trash and debris from the site at frequent intervals so that its presence will not delay the progress of the work.
- D. Removed materials, waste, trash, and debris shall become the property of the Contractor and shall be removed from the District's property and disposed of in a legal manner. Location of disposal site and length of haul shall be the Contractor's responsibility.

### **3.5 SALVAGE**

- A. Items or materials to be salvaged are indicated on the Contract Drawings and in the Contract Specifications.
- B. Protect metallic coatings on salvaged items. Remove adhering concrete from salvaged items.
- C. Repair, or replace with new material, salvaged material damaged or destroyed due to Contractor's negligence.

END OF SECTION

## **SECTION 31 20 00**

### **EARTHWORK**

#### **PART 1 - GENERAL**

##### **1.1 SECTION INCLUDES**

- A. Specifications for the excavation, filling, recompacting, grading and disposal of excess material.

##### **1.2 RELATED SECTIONS**

- A. Section 31 23 19 – Dewatering
- B. Section 31 23 33 – Trenching and Backfilling
- C. Section 32 11 23 - Aggregate Base

##### **1.3 REFERENCES**

- A. ASTM C136-84a – Standard Method for Sieve Analysis of Fine and Coarse Aggregate
- B. ASTM D1557 – Laboratory Compaction Characteristics of Soil Using Modified Effort
- C. ASTM D2922 – Density of Soil and Soil-Aggregate in Place by Nuclear Methods
- D. Caltrans – State of California Standard Specifications; latest edition
- E. Geotechnical Report – Geotechnical Report prepared by Terracon Consultants is available for review at the District.

##### **1.4 DEFINITIONS**

- A. Compaction
  - 1. The degree of compaction is specified as percent compaction. Maximum densities refer to the maximum laboratory dry soil densities obtainable at optimum moisture content as determined by ASTM D1557.
  - 2. Percent compaction (relative compaction) is the ratio of the measured field dry density to the laboratory maximum dry density.
- B. Excavation Slope: Excavation slope shall be defined as an inclined surface formed by removing material from below existing grade.

##### **1.5 SUBMITTALS**

- A. Product Data
  - 1. Fill materials
  - 2. Source of concrete and aggregate for approval

- B. Test Reports
  - 1. Gradation (ASTM C136)
  - 2. Density-In-Place (ASTM D2922)

**PART 2 - PRODUCTS**

**2.1 FILL MATERIALS**

- A. Class 2 Aggregate Base
  - 1. Class 2 aggregate base for subsequent backfill and/or pavement base to be ¾ inches maximum Class 2 aggregate base conforming to Caltrans, Section 26
- B. Engineered Fill Material: Soil excavated from site.
  - 1. Imported materials should have a plasticity index not less than 5 nor greater than 15, as determined by ASTM D4318; and expansion index not exceeding 20, as determined by UBC Specification 29-2; and a particle size not exceeding 3 inches as determined by ASTM D422.
- C Imported Fill Requirements: Imported fill, where required, shall be non expansive granular soil, free of organic matter and deleterious substances. Imported fill material shall conform to the following requirements:
  - 1. Grading:
 

<u>U. S. Sieve Size</u>	<u>Percentage Passing Sieve</u>
2 ½ inch	100
No. 8	25-45
No. 200	0-10
  - 2. Be thoroughly compactable without excessive voids.
  - 3. Meet the following plasticity requirements:
    - a. Maximum Plasticity Index of 12, as determined by ASTM D4318.
    - b. Maximum Liquid Limit of 35, as determined by ASTM D4318

**PART 3 - EXECUTION**

**3.1 CONSTRUCTION**

- A. Surplus Material
  - 1. Unless otherwise specified, surplus excavated material shall be disposed of off site in accordance with applicable ordinances and environment requirements at the expense of the Contractor.
- B. Hauling
  - 1. When hauling is down over highways or city streets, loads shall be trimmed and the vehicle shelf areas shall be cleaned after each loading.

2. Loads shall be watered after trimming to eliminate dust.

C. Subgrade

1. Unless directed otherwise on the drawings, existing subgrade shall be compacted to 90% RC, 12" in depth, prior to placement of base material.
2. Subgrade shall be inspected for compliance to the soils report by the District/Geotechnical engineer prior to filling or on achieving final cut depth

D. Finish Grading

1. Finish surfaces shall be smooth, compacted and free from irregularities. The degree of finish shall be that normally obtainable with a blade-grader.
2. Finish grades shall be as specified on the plans, except where a local change in elevation is required to match existing conditions, or to ensure proper drainage.
3. When the work is at an intermediate stage of completion, lines and grades shall be as specified within  $\pm 0.5$  foot or as necessary to provide adequate drainage.

**3.2 FIELD QUALITY CONTROL**

- A. Fill material shall be placed in horizontal layers and compacted with power operated tampers, rollers, idlers, or vibratory equipment. Material type, maximum layer depth, relative compaction, and general application are specified in Table A, below. Unless otherwise specified, fill classes shall be used where specified in Table A under General Application.

<b>Table A: Fill Classification</b>			
Material Type	Maximum Uncompressed Layer Depth (Inches)	Minimum Relative Compaction (Percent)	General Application
Aggregate Base	8"	95%	Roadway Grades

**3.3 TESTS**

A. Inspection Trenches

1. District will direct Contractor to construct inspection trenches in compacted or consolidated backfill to determine that Contractor has complied with these Specifications.

END OF SECTION

**SECTION 31 23 33**  
**TRENCHING AND BACKFILLING**

**PART 1 - GENERAL**

**1.1 SECTION INCLUDES**

- A. Specifications for excavating, backfilling and compacting for the installation of pipe and pipeline appurtenances (i.e. manholes, catch basins, area drains, etc.)

**1.2 RELATED SECTIONS**

- A. Section 31 20 00 - Earthmoving
- B. Section 31 23 19 - De-watering
- C. Section 32 11 23 - Aggregate Base

**1.3 REFERENCES**

- A. North Marin Water District Standard Specifications - Latest Edition
- B. Novato Sanitary District Standard Specifications - Latest Edition
- C. PG&E Standard Specifications - Latest Edition
- D. AT&T Standard Specifications - Latest Edition
- E. Marin County Uniform Construction Standards, May 2008
- F. California Plumbing Code - Latest Edition
- G. Caltrans Standard Specifications and Drawings - Latest Edition

**PART 2 - PRODUCTS**

**2.1 BACKFILL MATERIAL**

- A. Trench backfill shall consist of Class 2 Aggregate Base, unless otherwise noted.



## **2.2 PIPING MATERIAL**

- A. All piping material shall conform to respective utility agency and the California Plumbing Code.

## **2.3 BURIED WARNING AND IDENTIFICATION TAPE**

- A. Polyethylene plastic and metallic core or metallic-faced, acid- and alkali-resistant, polyethylene plastic warning tape manufactured specifically for warning and identification of buried utility lines. Provide tape on rolls, 3-inch minimum width, color coded as specified below for the intended utility with warning and identification imprinted in bold black letters continuously over the entire tape length. Warning and identification to read, 'CAUTION, BURIED (intended service) LINE BELOW" or similar wording. Color and printing shall be permanent, unaffected by moisture or soil.

1. Warning Tape Color Codes.  
Red: Electric.  
Yellow: Gas, Oil; Dangerous Materials.  
Orange: Telephone and Other Communications.  
Blue: Water Systems.  
Green: Sewer Systems.  
White: Steam Systems.  
Grey: Compressed Air.
2. Warning Tape for Metallic Piping: Acid and alkali-resistant polyethylene plastic tape conforming to the width, color, and printing requirements specified above. Minimum thickness of tape shall be 0.003 inch. Tape shall have a minimum strength of 1500 psi lengthwise, and 1250 psi crosswise, with a maximum 350 percent elongation.
3. Detectable Warning Tape for Non-Metallic Piping: Polyethylene plastic tape conforming to the width, color, and printing requirements specified above. Minimum thickness of the tape shall be 0.004 inch. Tape shall have a minimum strength of 1500 psi lengthwise and 1250 psi crosswise. Tape shall be manufactured with integral wires, foil backing, or other means of enabling detection by a metal detector when tape is buried up to 3-feet deep. Encase metallic element of the tape in a protective jacket or provide with other means of corrosion protection.

## **2.4 DETECTION WIRE FOR NON-METALLIC PIPING**

- A. Detection wire shall be insulated single strand, solid copper wire with a minimum of 12 AWG.

## **PART 3 - EXECUTION**

### **3.1 EXCAVATION**

#### **A. General**

1. Keep trench dry throughout construction operations
2. Trench excavation shall follow the alignment of the pipe or utility centerline
3. No more than 100 LF of trench shall be open at one time

#### **B. Shoring and Bracing**

1. Contractor is responsible for any damage or injury resulting from his construction operations. Contractor shall perform, at his own expense, all necessary repair work or reconstruction.
2. Contractor will be responsible for all shoring with bracing design and installation.

#### **C. Excavation Required Beyond Trench Limits**

1. Excavation (bell holes) where necessary in the sides and bottom of the trench at pipe joint locations shall be large enough to make joints and permit inspection.
2. Excavation to a greater depth than shown on the plans may be ordered by the Project Geotechnical Consultant if the native material at the bottom of the trench will not provide proper support for the pipe or if the excavation is in rock.
3. Remove all adjacent, saturated material where pipeline leaks occur.

### **3.2 UTILITIES**

#### **A. Location**

1. Approximate known locations of underground utilities and structures are indicated on the plans. Contractor shall determine exact location of underground utilities and structures prior to construction.
2. Adjustments of pipe alignment and elevation will be authorized by the District where exploratory work indicates the need.

#### **B. Excavation Around Utilities**

1. Excavation and other work under or adjacent to utilities shall not interfere with their safe operations and use.
2. Probe carefully to determine the exact location of utility and hand excavate where necessary to avoid damage.
3. In the event of damage incurred during construction near such structures or property, Contractor shall immediately notify the District and other appropriate utility or public safety authorities and shall arrange for immediate repairs at Contractor's expense.

C. Tunneling Under Utilities

1. Tunneling may be allowed for short distances with the approval from the Project Geotechnical Consultant.

**3.3 BLASTING**

- A. Blasting will not be permitted.

**3.4 BACKFILL OF TRENCHES**

- A. Prior to backfilling, the trench shall be cleared of all wood and debris.
- B. Backfill pipeline trenches to the level of the original ground surface or the underside of the pavement base course.
- C. Backfill material shall not be dropped directly on the pipe.
- D. Carefully remove timbering, sheeting, shoring and sheet piling, according to the instructions of the shoring system designer or the manufacturer, using methods that will minimize caving. If caving is occurring, the shoring system will be required to remain in place up to one to six inches above the top of the pipe.
- E. Jetting of trench backfill is not permitted.
- F. If trench has been excavated below the specified depth, that portion of the trench shall be backfilled with Class 2 or select material and compacted before pipe installation, at the Contractor's expense.
- G. If pipe or conduit has less than 18 inches of final cover, trench shall be backfilled with Control Density Fill (CDF) to a depth specified by the Engineer.

END OF SECTION

**SECTION 32 11 23**  
**AGGREGATE BASE**

**PART 1 - GENERAL**

**1.1 SECTION INCLUDES**

- A. Specifications for furnishing, spreading, and compacting aggregate base course for pavements as indicated.

**1.2 REFERENCES**

- A. American Society for Testing and Materials (ASTM):
  - ASTM D2922 Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
  - ASTM D3017 Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
- B. State of California, Department of Transportation (Caltrans), Standard Specifications:
  - Section 17 Watering
  - Section 26 Aggregate Bases
- C. State of California, Department of Transportation (Caltrans), Standard Test Methods:
  - Calif. Test 201 Method of Soil and Aggregate Sample Preparation Aggregates
  - Calif. Test 202 Method of Tests for Sieve Analysis of Fine and Coarse Aggregates
  - Calif. Test 205 Method of Determining Percentage of Crushed Particles
  - Calif. Test 216 Method of Test for Relative Compaction of Untreated and Treated Soils and Aggregates
  - Calif. Test 217 Method of Test for Sand Equivalent
  - Calif. Test 229 Method of Test for Durability Index
  - Calif. Test 301 Method of Test for Resistance "R" Value of Treated and Untreated Bases, Subbases and Basement Soils by the Stabilometer

**PART 2 - PRODUCTS**

**2.1 AGGREGATE BASE MATERIAL**

- A. Class 2 aggregate base shall be free of vegetable matter and other deleterious substances. Coarse aggregate, material contained on the No. 4 sieve, shall consist of material of which 25 percent by weight shall be crushed particles as determined by

California Test Method No. 205. Class 2 aggregate base shall conform to one of the following gradings, determined in accordance with California Test Method No. 202:

Percentage Passing Sieves for 3/4" maximum

Sieve Sizes	
2 inch	----
1 1/2 inch	----
1 inch	<b>100</b>
3/4 inch	<b>90-100</b>
No. 4	<b>35-60</b>
No. 30	<b>10-30</b>
No. 200	<b>2-9</b>

B. Class 2 aggregate base shall conform to the following additional requirements:

Tests	Test Method No. Calif.	Requirements
Resistance (R-Value)	301	78 min.
Sand Equivalent	217	22 min.

Tests	Test Method No. Calif.	Requirements
Durability Index	229	35 min.

**2.02 SOURCE QUALITY CONTROL**

A. Submit certificate of compliance for approval prior to installation of material.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Call for an inspection by the Engineer and obtain written acceptance of the prepared subgrade or subbase before proceeding with the placement of aggregate base course.
- B. The subgrade or subbase to receive aggregate base course, immediately prior to spreading, shall conform to the compaction and elevation tolerances indicated for the material involved and shall be free of standing water and loose or extraneous material.

### **3.2 INSTALLATION STANDARDS**

- A. Aggregate base course shall be applied over the prepared subgrade or subbase and compacted in accordance with Section 26 of the Caltrans Standard Specifications.
- B. Aggregate base course shall be minimum uniform thickness after compaction of dimensions indicated. Where not indicated, compacted thickness shall be six inches for driveways/sidewalks and eight inches for roadways.
- C. All compaction expressed in percentages in this section refers to the maximum dry density as determined by California Test Method No. 216.

### **3.3 SPREADING OF MATERIAL**

- A. Aggregate for base course shall be delivered as uniform mixture of fine and coarse aggregate and shall be spread in layers without segregation.
- B. Aggregate base course material shall be free from pockets of large and fine material. Segregated materials shall be remixed until uniform.
- C. Aggregate base material shall be moisture-conditioned to near optimum moisture content in accordance with the applicable requirements of Section 17 of the Caltrans Standard Specifications.
- D. Aggregate base course six inches and less in thickness may be spread and compacted in one layer. For thicknesses greater than six inches, the base course aggregate shall be spread and compacted in two or more layers of uniform thickness not greater than six inches each.

### **3.4 COMPACTING**

- A. Relative compaction of each layer of compacted aggregate base material shall be not less than 95 percent as determined by California Test Method No. 216.
- B. Thickness of finished base course shall not vary more than 3/4 inch from the indicated thickness at any point. Base which does not conform to this requirement shall be reshaped or reworked, watered, and recompact to achieve compliance with specified requirements.
- C. The surface of the finished aggregate base course at any point shall not vary more than 3/4 inch above or below the indicated grade.

### **3.5 FIELD QUALITY CONTROL**

- A. Perform field tests in accordance with ASTM D2922 to determine compliance with specified requirements for density and compaction of aggregate base material, and with ASTM D3017 to determine moisture-content compliance of the installed base course.

END OF SECTION

**SECTION 32 12 16**  
**ASPHALTIC CONCRETE PAVING**

**PART 1 - GENERAL**

**1.1 SECTION INCLUDES**

- A. Specifications for providing asphaltic concrete paving as indicated.

**1.2 RELATED SECTIONS**

- A. Section 31 20 00 - Earthmoving
- B. Section 32 11 23 - Aggregate Base
- C. Section 32 17 23 - Pavement Marking

**1.3 REFERENCES**

- A. State of California, Department of Transportation (Caltrans), Standard Specifications
  - Section 39 Asphalt Concrete
  - Section 92 Asphalts
  - Section 93 Liquid Asphalts
  - Section 94 Asphaltic Emulsions
- B. State of California, Department of Transportation (Caltrans), Standard Test Methods
  - Calif. Test 202 Method of Tests for Sieve Analysis of Fine and Coarse Aggregates
  - Calif. Test 304 Method of Preparation of Bituminous Mixtures for Testing
  - Calif. Test 366 Method of Test for Stabilometer Value
  - Calif. Test 375 Determining the In Place Density and Relative Compaction of AC Pavement

**1.4 PROTECTION**

- A. Protect concrete pavements and walks, curbs and bases, and other improvements adjacent to the operations with suitable materials. The Contractor shall be responsible for any damage caused by the Contractor's employees or equipment and shall make necessary repairs. Building and other surfaces shall be covered with paper or other protection, where required. All damage caused by the Contractor's operations shall be prepared or replaced as required.



## **PART 2 - PRODUCTS**

### **2.1 BASE COURSE MATERIAL**

- A. Class 2 Aggregate Base. Percentage composition by weight of aggregate base material shall conform to the 3/4 inch maximum grading when determined by California Test 202.

### **2.2 TACK COAT (VERTICAL SURFACES)**

- A. Tack Coat: Diluted SS-1 or SS-1h emulsion or undiluted RS-1 emulsion in conformance with Section 94 or the Caltrans Standard Specifications.

### **2.3 ASPHALT PAVING MATERIALS**

- A. Paving Asphalt: All purpose, aged residue, steam refined, PG 64-16 grade, in accordance with Section 92 of the Caltrans Standard Specifications.
- B. Aggregate: Type A, with the grading of the combined aggregate conforming to 1/2 inch maximum size, medium grading, as specified in Section 39 of the Caltrans Standard Specifications.
- C. Mixing Facilities: Asphalt concrete surfacing material shall be furnished from an approved commercial asphalt central mixing plant.

### **2.4 SOURCE QUALITY CONTROL**

- A. Contractor shall submit Certificate of Compliance from manufacturer for approval prior to installation.

### **2.5 A.C. DIKEIBERM**

- A. A.C. dikes shall be per Caltrans Standard A87, Type B. Dikes shall be installed by means of a continuance automatic curbing machine.
- B. A.C. berms shall be installed as detailed in the drawing.

## **PART 3 - EXECUTION**

### **3.1 PLACING OF BASE COURSE**

- A. The Contractor shall call for an inspection by the Engineer and obtain written approval of the subgrade before proceeding with the base course.
- B. Base course shall be minimum uniform thickness after compaction of dimensions indicated. Where not indicated, compacted thickness shall be six inches for parking stalls and eight inches for roads, driveways, and aisles of parking areas.
- C. Base course shall be placed over finished subgrade and compacted in accordance with Section 32 11 00 - Aggregate Base.
- D. After base course has been completed, the Contractor shall call for an inspection by the Engineer and obtain written approval before proceeding with application of the asphalt wearing surface.

### **3.2 PLACING ASPHALT CONCRETE**

- A. Areas to be paved shall be covered with a layer of hot asphalt concrete surfacing not less than the thickness indicated after compaction. Where not indicated, compacted thickness shall be two inches for parking stalls and three inches for roads, driveways, and aisles of parking areas.
- B. Paving asphaltic concrete shall be delivered, laid, rolled, and finished in accordance with Section 39 of the Caltrans Standard Specifications.
- C. Before placing asphalt concrete, a tack coat (paint binder) shall be applied to all vertical surfaces against which asphalt concrete surfacing will be placed. Tack coat (paint binder) shall be applied in accordance with Section 39-4 of the Caltrans Standard Specifications at the rate of from 0.02 to 0.10 gallons per square yard.
- D. Finish surface of the wearing course shall be thoroughly compacted, smooth, and free from ruts, humps, depressions, cold joints, or other irregularities.
- E. Finish paving shall conform to slopes, lines, and finish grades indicated, and shall drain properly. Where adjacent surfaces are intended to be flush (as at concrete gutters, walks, and paving), they shall conform smoothly at all joints.
- F. Ridges, indentations, and other objectionable marks left in the surface of the asphalt concrete by paving or rolling equipment shall be eliminated by rolling. The use of equipment that leaves ridges, indentations, or other objectionable marks in the asphalt concrete shall be discontinued, and other acceptable equipment shall be employed.
- G. Where cold joints are indicated or necessary, cut back the placed and compacted cold asphalt a minimum of three inches with a concrete or masonry power saw, so that a vertical face of compacted full thickness material is exposed. Treat this surface with a tack coat before proceeding with the placement of new asphaltic concrete surfacing.
- H. Finish paving shall conform to finish elevations within plus or minus 0.01 of a foot and shall be level to within plus or minus 1/4 inch in 10 feet when measured with a 10 foot straightedge in any direction.

### **3.3 FIELD QUALITY CONTROL**

- A. The Contractor shall control the quality of the work and shall provide adequate testing to assure compliance with these Specifications.
- B. After completion of paving work, all paving shall be flooded with water, and any resulting "ponds" shall be ringed with chalk. Such hollows shall be corrected with addition of asphalt paving materials and rerolling until all paving is completely level and free from hollows and high spots.
- C. The Engineer shall perform in-place density and compaction tests of the completed pavement in accordance with California Test 375 to determine compliance with specified requirements. Test shall be performed as often as necessary to verify compliance, but not less frequently than the following:
  - 1. One test for each street or driveway intersection for which asphalt pavement replacement is required.

2. One test for every 1,000 square yards of asphalt pavement at locations where the paved area exceeds 1,000 square yards.

### **3.4 MAINTENANCE OF PAVEMENT**

- A. Upon completion of final rolling, traffic shall not be permitted on the finished pavement for at least six hours, and until the asphalt concrete has cooled sufficiently to withstand traffic without being deformed.
- B. Finished pavement shall be maintained in finished clean condition until the work is accepted by the District.

END OF SECTION

## SECTION 32 16 13

### CONCRETE CURBS, GUTTERS, AND WALKS

#### PART 1 - GENERAL

##### 1.1 SECTION INCLUDES

- A. Specifications for providing portland concrete curbs, gutter, sidewalks, driveways, and island paving, as indicated.

##### 1.2 RELATED SECTIONS

- A. Section 03 30 00 - Cast-In-Place Concrete
- B. Section 32 11 23 - Aggregate Base

##### 1.3 REFERENCES

- A. American Concrete Institute (ACI):
  - ACI 301 Standard Specifications for Structural Concrete
  - ACI 318/  
381R Building Code Requirements for Structural Concrete and  
Commentary
- B. American Society for Testing and Materials (ASTM)
  - ASTM A53 Specification for Pipe, Steel, Black and Hot-Dipped, Zinc Coated,  
Welded and Seamless
  - ASTM A615/  
A615M Specification for Deformed and Plain Billet-Steel Bars for  
Concrete Reinforcement
  - ASTM A663/  
A663M Specification for Steel Bars, Carbon, Merchant Quality,  
Mechanical Properties
  - ASTM C260 Specification for Air-Entraining Admixtures for Concrete
  - ASTM C309 Specification for Liquid Membrane-Forming Compounds for  
Curing Concrete
  - ASTM C881 Specification for Epoxy-Resin-Base bonding Systems for  
Concrete
- C. UCS Marin County Uniform Construction Standards, May 2008

##### 1.4 SUBMITTALS

- A. Product Data

Respective manufacturer's product data for manufactured products.

## 1.5 QUALITY ASSURANCE

### A. Tolerances

1. Construct concrete surfaces within 1/4 inch of the indicated elevation, and deviating not more than 1/8 inch from a 10 foot straightedge placed anywhere on the surface.
2. Slab tolerances shall be as specified in ACI 301.

### B. Finishes

Slab finishes shall be as specified herein accordance with the requirements of ACI 301.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

#### A. Provide Class of Concrete indicated on the Contract Drawings or Construction Drawings.

- a. Provide air-entrainment of three percent ( $\pm$  one percent) with admixture conforming to ASTM C260.
- b. Nominal size of large aggregate shall be 1".
- c. Minimum total cement content shall be 520 pounds per cubic yard of concrete.
- d. Minimum strength of concrete shall be 3000 psi.

#### B. Tie Bars

ASTM A615, Grade 60, of type and size indicated.

#### C. Dowels

Plain round bars meeting requirements of ASTM A615/A615M, Grade 60, of ASTM A663/A663M, Grade 80, epoxy-coated bars, furnished with approved snugfitting ASTM A53 galvanized pipe sleeve. Provide sleeve with one end closed.

#### D. Weep Holes

ASTM A53 galvanized pipe of size indicated.

#### E. Concrete Curing Compound

ASTM C309, Type 1.

F. Epoxy Adhesive

ASTM C881, Type V for load bearing concrete, Grade and Class as determined by project conditions and requirements.

### **PART 3 - EXECUTION**

#### **3.1 PREPARATION OF SUBGRADE**

- A. Excavate for and prepare the subgrade as specified true to the indicated grade and cross section.
- B. Test completed subgrade for correct grade and cross section by means of template supported on side forms.
- C. Dampen subgrade and forms just before placing concrete.

#### **3.2 TYPES OF CONSTRUCTION**

- A. Provide cast-in-place concrete construction, plain or reinforced as indicated. Curbs, gutters, and walks shall be formed accurately to indicated section profile with template screed.
- B. Extruded curbs and gutter, placed by an extrusion machine, may be provided where site conditions are suitable and the extrusion process is appropriate for the purpose.

#### **3.3 JOINTS**

- A. Expansion Joints
  - 1. Construct ½ inch thick expansion joints in the following locations:
    - a. In curb and combination curb and gutter at the locations of expansion joints in the concrete roadway.
    - b. In curb or combination curb and gutter, at points where curved and tangent sections join.
    - c. Between curb or combination curb and gutter, and any drain inlet, or similar structure occurring within the limits of the curb or combination curb and gutter.
    - d. At corners in sidewalks, following the projections of the building lines from the corner of the building to the curb.
    - e. Between sidewalks and any permanent structure.
    - f. Between sidewalk and curb.

2. Construct 1/4 inch thick expansion joints in the following locations:
  - a. Through sidewalks at intervals not greater than 15 feet.
  - b. In sidewalks, encircling fixtures more than 12 inches in diameter.
3. Construct expansion joints as specified in UCS, except that load transfer devices will not be required unless indicated. Shape performed filler to cross section of curbs and combination curb and gutter.

**B. Contraction Joints**

In sidewalks, construct contraction joints in uniform intervals not greater than six feet, by means of a suitable tool which will form a groove 1/2 inch deep and 1/4 inch wide, with the edges rounded to a 1/4 inch radius.

**C. Tooling**

Finish joints with an edging tool having 1/4 inch radius, leaving joints free of mortar and concrete. In preformed type joints, leave joint filler material exposed for full length of joint with clean and true edges.

**D. Joint Sealing**

1. Seal to within 1/8 inch of pavement surface all joints in curbs and gutters, including gutter surfaces of combination curb and gutter sections, all joints between curbs and vehicular pavement, all joints between gutters and vehicular pavement, and all other expansion joints. Do not seal other joints unless so indicated.
2. Do not seal joints until concrete curing is complete. Prior to installation of the joint sealing compound, clean the joints of dirt and other foreign material. Joints may be cleaned with compressed air jets provided that the air in such jets is free of oil or water. Do not fill joints when there is any free water in or adjacent to joints. Joint walls and all surfaces to which the sealing material is to adhere shall be surface dry for at least three hours prior to sealing.
3. Apply with approved pressurized equipment. Perform sealing joints to make them impervious to water and to prevent the sealing compound from spreading over the surface of the pavement.

**3.4 FORM REMOVAL**

- A. Remove front curb forms not less than two or more than six hours after placing concrete, but in no case while the concrete is still plastic enough to slump.
- B. Remove other forms not less than 12 hours after finishing is completed.

### **3.5 FINISHING**

#### **A. Curb and Combination Curb and Gutter:**

1. Trowel the face of curb smooth to a depth of not less than two inches below the flow line, or the flow line of integral curb and gutter, and finish with a steel trowel, all immediately after removal of front curb forms.
2. Finish all curb edges with a radius of 1/2 inch.
3. Provide a final fine brush finish to both top and face of curb with brush strokes parallel to the line of the curb, so that both top and front face present the same uniform appearance.
4. Keep the curb face wet during above finishing operations.
5. Allow no coarse aggregate to show on the finished curb surface.

#### **B. Sidewalk, Island Paving and Ramps**

1. After the concrete has been placed, consolidated, struck off, leveled, grooved and edged as specified herein, and in UCS, do not work the concrete further until ready for floating.
2. Provide "floated finish" or light "broom finish" as indicated in accordance with the requirements of ACI 301.
3. For pedestrian and wheelchair ramps, and all other surfaces where the Contract Drawings require a non-slip finish, provide a "non-slip finish" in combination with a "floated finish" or "broom finish" in accordance with the requirements of ACI 301.
4. Broom finish shall be applied perpendicular to the direction of traffic flow.

#### **C. Joints and Edges**

As soon as the condition of the work permits, perform joint work, edging and marking. Finish all edges with a radius of 1/4 inch.

### **3.6 CURING AND PROTECTION**

- A. Comply with the applicable requirements for curing concrete with liquid membrane-forming curing compound. Do not permit traffic on new concrete pavement until the concrete has cured a minimum period of ten days.
- B. Provide damp curing only for concrete slab surfaces indicated to be treated with concrete hardener and dust proofer.

### **3.7 FIELD QUALITY CONTROL**



- A. The engineer shall perform inspections and tests. The Contractor shall provide such samples and services to facilitate testing.

END OF SECTION

**SECTION 32 17 23**  
**PAVEMENT MARKING**

**PART 1 - GENERAL**

**1.1 SECTION INCLUDES**

- A. Specifications for providing traffic striping and control markings on pavement, parking stall striping, and painted curbs as indicated.

**1.2 RELATED SECTIONS**

- A. Section 32 12 16 - Asphalt Paving

**1.3 REFERENCES**

- A. State of California, Department of Transportation (Caltrans), Standard Specifications/  
Manuals
  - Section 84                      Traffic Stripes and Pavement Markings
  - Section 85                      Pavement Markers
  - Traffic Manual   Standard Drawings      Latest Edition
- B. State of California, Department of Transportation (Caltrans), Standard Test Methods
  - Calif. Test 669 Testing for Specification Compliance of Non-Reflective and Reflective Pavement Markers
- C. California Air Resources Board (CARB)
  - CARB/VOC Permissible Content of Volatile Compounds (VOC in Paints)

**1.4 SUBMITTALS**

- A. Shop Drawings

Submit drawings and diagrams, indicating stripe width of roadway divider stripes and parking stalls, configuration and dimensions of directional arrows, style and size of letters for "compact car" designation, configuration and dimensions of international handicapped symbol, and any other traffic control markings on pavement, such as "in" and "out" or "enter" and "exit" designations.

B. Certificate of Compliance

Submit evidence or affidavit which certifies that paint to be used complies with latest CARB/VOC regulations.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

A. Traffic Line Paint

Provide paint conforming to the requirements of Section 84 of the Caltrans Standard Specifications, white in color for traffic striping, parking stalls, and other control markings on pavement, yellow in color for traffic control markings where indicated, blue in color for handicapped parking stalls, red in color for curbs where no parking is indicated, white in color for curbs where passenger discharge and pickup is indicated.

B. Thermoplastic Traffic Stripes and Pavement Markings

Provide thermoplastic traffic stripes and pavement markings where indicated, including glass beads, conforming to the requirements of Section 84 of the Caltrans Standard Specifications.

C. Paint for parking stalls and ADA Striping shall be waterborne, white, State Specification PTWB-01R2 (March 2010)

D. Markers

Provide markers and adhesive in accordance with Section 85 of the Caltrans Standard Specifications.

Markers for hydrants 4" x 4" x 3/4", blue prismatic, high-impact plastic conforming to ASTM D-788, Grade 8 and shall conformed to the local Fire Protection District Standards. The hydrant markers shall be attached to the pavement using a hot melt bituminous adhesive conforming to Section 85 of the Standard Specifications.

## **PART 3 - EXECUTION**

### **3.1 APPLICATION**

A. Provide traffic striping and control markings on pavement and parking stalls in accordance with the layout, configurations, and dimensions indicated on the Contract Drawings or Construction Drawings and approved shop drawings.

B. Paint application equipment shall conform to the requirements of the Caltrans Standard Specifications. Place markers in accordance with Section 85 of the Caltrans Standard Specifications.

C. Traffic control markings and parking stalls shall be applied with the use of substantial cutout patterns and templates, or with striping equipment which applies straight, uniform width, sharp lines. Coverage of paint shall be thorough and complete in accordance with the paint manufacturer's instructions and recommendations.

- D. Where “enter” and “exit” control markings are side-by-side on pavements, indicating two-way traffic, such as “enter and “exit” designations shall be different colors, such as white and yellow, with a centerline separating the two directions of traffic.
- E. Traffic control markings and parking stalls shall be sharp and accurate, straight where required, without fuzziness at edges of lines.
- F. Handicapped parking stalls shall include the International Handicapped Symbol.
- G. At completion, Contractor shall check the work thoroughly and shall touch-up traffic control markings and parking stalls which are not distinct or thorough in coverage, or which are not uniform in color.
- H. Pavement markers shall be placed according to the State Traffic Manual details, except as modified by the project plans or Engineer. All missing and/or broken reflectors shall be replaced within the project limits. The blue reflector shall be installed in the center of the traffic lane adjacent to each fire hydrant. It is the contractor’s responsibility to locate each fire hydrant. Pavement markers shall be applied within four days of resurfacing.

### **3.2 FIELD QUALITY CONTROL**

- A. Perform tests in accordance with Caltrans Test 669 to verify compliance with Specification requirements.

END OF SECTION

## SECTION 32 84 00 - PLANTING IRRIGATION

### 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. Backfill
2. Pipes and fittings
3. Pipe sleeves
4. Valves
5. Remote control valves
6. Miscellaneous piping specialties
7. Sprinklers and bubblers
8. Quick couplers
9. Drip irrigation
10. Controllers and enclosure
11. Electrical conduit, wiring, and water proof wire connectors
12. Boxes for valves and wiring
13. Marking and identification products
14. Maintenance period
15. Irrigation audit

#### 1.3 DESCRIPTION OF WORK

- A. Furnish all labor, materials, supplies, equipment, tools, and transportation, and perform all operations in connection with and reasonably incidental to the complete installation of the irrigation system, and guarantee/ warranty.
- B. Connect electrical power supply and data lines to irrigation controller.
- C. Testing of the irrigation system to assure proper operation. Programming of controller and set-up and testing of sensors.

- D. All necessary parts that are required to complete, modify, repair, and restore either existing and/ or new irrigation system shall be furnished and installed. All new and existing systems shall meet industry standards and be in operating order at the completion of maintenance period.
- E. Maintain and repair irrigation system as needed during maintenance period.
- F. Related Sections:
  - 1. Division 31 - Section "Earth Moving"
  - 2. Division 32 - Section "Portland Cement Concrete Paving"
  - 3. Division 32 - Section "Planting"

#### 1.4 SUBMITTALS

- A. Materials list:
  - 1. Contractor shall submit to Landscape Architect complete list of all irrigation system materials and processes proposed to be furnished and installed as part of contract. List shall be provided and approved by Landscape Architect before ordering irrigation system materials.
  - 2. Submittals shall have the following information:
    - a. The catalog cut sheets shall identify product from the most recent manufacturer's catalog or from manufacturer's web-site.
    - b. The catalog cut sheets shall clearly indicate the manufacturer's name and item model number. The model number, specified options and specified size shall be clearly indicated on catalog cut sheets.
    - c. Submittal format requirements:
      - 1) Title Sheet with job name, contractor's name, contractor address and telephone number, submittal date, and submittal number.
      - 2) Submittals shall be provided as one complete package for the project
      - 3) Submittal package shall be stapled or bound in such a way as to allow for disassembly for review processing. Submittal maybe sent as a single .pdf file and electronically transmitted.
      - 4) Submittal package shall have all pages numbered in the lower right hand corner.
    - d. The Landscape Architect will allow no substitution without prior written acceptance.
    - e. The Landscape Architect will not review the submittal package unless provided in the format described above.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store plastic piping protected from direct sunlight. Support to prevent sagging and bending. Keep pipes free from dirt and debris.

## 1.6 PROJECT CONDITIONS

- A. Interruption of Existing Water Service: Do not interrupt water service to facilities occupied by Owner or others unless permitted under the following conditions and then, only after arranging to provide temporary water service according to requirements indicated:
1. Notify Owner no fewer than 7 days in advance of proposed interruption of water service.
  2. Do not proceed with interruption of water service without Owner's written permission.

## 1.7 TESTS AND INSPECTIONS

- A. The Contractor is responsible for notifying the Landscape Architect for site visits to review work as follows. Provide Landscape Architect 48 hours minimum notice to schedule these visits.
1. Pre-construction conference with general contractor, grading contractor, landscape contractor, and landscape architect.
  2. Staking
    - a. Set stakes to identify locations of proposed point of connection, backflow preventer, master valve and flow sensor assembly, controller, quick coupler, remote control valves, isolation valves, and mainline pipe.
  3. Mainline Pressure/ Leak Test: After installation of mainline pipe, valves, and remote control valves.
    - a. Perform test after welded plastic pipe joints have cured at least 24 hours, or longer if manufacturer of solvent cement requires.
    - b. Leak Test procedures:
      - 1) Charge system slowly to avoid water hammer.
      - 2) Bleed system to remove air from pipes.
      - 3) Maintain pressure in mainline pipe for 24 hour duration
      - 4) Pressurize system to 125% of design pressure for one hour using hydraulic pump or other safe method.
      - 5) Visually inspect all parts of irrigation system while the system is pressurized.
      - 6) Repair any leaks found in mainline irrigation system.
  4. Operational Test: After electrical circuitry has been energized, operate controllers and automatic control valves to confirm proper system operation.
    - a. If operation test presents problems contractor shall contact a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.
  5. Coverage Test: After completion of irrigation system a coverage test shall be performed to determine uniform and complete coverage of landscape area.
    - a. 24 hours before test, run irrigation system at least once in all landscape planters.
    - b. Landscape Architect shall review and approve all planters before plant material, bark mulch, gravel, or decomposed granite is installed.

6. Test and adjust controller and irrigation equipment. Replace damaged and malfunctioning irrigation components and equipment.
7. Irrigation Audit: Irrigation system is designed in accordance with the Model Water Efficient Landscape Ordinance (MWELO). Landscape and irrigation installation shall meet or exceed the MWELO, and shall pass an irrigation water audit.

## 1.8 PROJECT WARRANTY

- A. Contractor to furnish and install all work free of defects in materials and workmanship for period of 1-year from start of Maintenance Period per Div. 32- Section "Planting". Contractor to warranty all work furnished in accordance to the drawings and specifications. Ordinary wear and tear, neglect from maintenance, abuse, and vandalism are exempt from the contractor warranty. Repair and replacement of defective work and material will be done by the contractor at no cost to the owner. Repairs and replacement shall be conducted within 48 hours of notification to contractor.

## 2. PRODUCTS

### 2.1 QUALITY ASSURANCE

- A. Materials used in the system shall be new and free of flaws and defects of any type.

### 2.2 BACKFILL MATERIAL

- A. Backfill shall be either screened on-site material or imported.
- B. Backfill material shall be free of organic materials, large clods of earth or rocks larger than one (1) inch diameter, trash, construction debris, asphalt, or concrete.
- C. Imported material shall be a clean loam soil.

### 2.3 PIPE AND FITTINGS

- A. Comply with requirements in the drawing for applications of pipe and fitting materials, and for joining methods for specific services, service locations, and pipe sizes.
- B. Use a dielectric union wherever a copper-based metal (copper, brass, bronze) is joined to an iron-based metal (iron, galvanized steel, stainless steel).
- C. Assemblies calling for threaded pipe connections shall utilize PVC Schedule 80 nipples and PVC Schedule 80 threaded fittings.



- D. Joint sealant: Use only Teflon-type tape pipe joint sealant on plastic threads. Use non-hardening, nontoxic pipe joint sealant formulated for use on water-carrying pipes on metal threaded connections.
- E. PVC Pipe: ASTM D 1785, PVC 1120 compound, Class 315, schedule 40, schedule 80, with integral belled end. Pipe color: Purple.
  - 1. PVC Socket Fittings: ASTM D 2466, Schedule 80.
  - 2. PVC Threaded Fittings: ASTM D 2464, Schedule 80.
  - 3. Use Schedule 40 and SCH 80, Type 1, PVC solvent weld fittings conforming to ASTM Standards D2466 and D1784. Use primer approved by the pipe manufacturer. Solvent cement to conform to ASTM Standard D2564.
- F. PVC Threaded Nipples: PVC Schedule 80 nipples shall be extruded. PVC Schedule 80 nipples shall be made from NSF approved PVC compound conforming to ASTM D1784, Cell Classification 12454B.
- G. Mainline detection tape:
  - 1. Manufacturer: TChristy. Model# TA.DT.2.PRW. 5 mil (.005") thick tape w/aluminum foil core and polyethylene backing, 2" width, and shall say "Caution Reclaimed Water Line Buried Below".

#### 2.4 IRRIGATION PIPE SLEEVE

- A. Corrugated HDPE with dual wall construction for irrigation sleeves eight (8) inches and larger.
- B. PVC schedule 40 for irrigation sleeves six (6) inches and smaller.

#### 2.5 REMOTE CONTROL VALVES

- A. Manufacturers: Refer to drawings for manufacturer, model, and size of remote control valves.
- B. Remote control valve to be in normally closed position.
- C. Remote control drip zone shall have forty (40) psi pressure regulator and a filter cartridge with a minimum of 120 mesh. Size valve, pressure regulator and filter for drip zone flow rate.

#### 2.6 QUICK COUPLERS

- A. Manufacturers: Refer to drawings for manufacturer, model, and size of quick coupler.
- B. Coupler cap color: Purple.

- C. Description: Factory-fabricated, bronze or brass, two-piece assembly. Include coupler water-seal valve; removable upper body with spring-loaded or weighted, locking rubber-covered cap; hose swivel with ASME B1.20.7, 3/4-11.5NH threads for garden hose on outlet; and operating key.

## 2.7 SPRINKLERS AND BUBBLERS

- A. General Requirements: Designed for uniform coverage over entire spray area indicated at available water pressure.
- B. Plastic, Pop-up Spray Sprinklers:
  - 1. Refer to drawings for manufacturer, model, and size of pop-up spray sprinklers and bubblers.

## 2.8 DRIP IRRIGATION SYSTEM

- A. Manufacturers: Refer to drawings for manufacturer, model, and size of drip irrigation system and associated components.
- B. Drip Tubes with Inline Emitters:
  - 1. Tubing: Flexible Polyethylene tubing.
  - 2. Emitter spacing: 12", 18", or 24" on center as specified on drawings.
  - 3. Emitters: Check valve and pressure compensation.
- C. Fittings: Drip tubing fittings shall be per manufacturer's specifications.
- D. Tubing color: Purple. Drip emitter cap color: Purple.
- E. Filter Units: Plastic housing, with corrosion-resistant internal parts; of size and capacity required for devices downstream from unit.
- F. Air Relief Valves: Plastic housing, with corrosion-resistant internal parts.
- G. Vacuum Relief Valves: Plastic housing, with corrosion-resistant internal parts.

## 2.9 IDENTIFICATION PRODUCTS

- A. Remote control valve tags:
  - 1. Manufacturer: TChristy. Model#ID.MAX.PI.RC005. Plastic tag attached by nylon tie to valve, hot stamped lettering, tag color: Purple. Tag to identify valve based on drawings controller letter and valve numbering.
- B. Backflow History Tag

1. Manufacturer: TChristy. Model# ID.BFHT.1. Plastic tag attached directly and permanently to backflow.

## 2.10 AUTOMATIC IRRIGATION CONTROLLERS

- A. Manufacturer: Refer to drawings for manufacturer and model of automatic irrigation controller.
- B. ET Sensor Manufacturer: Refer to drawings for manufacturer and model of ET sensor.
- C. Remote control. Refer to drawings for manufacturer and model of hand held remote control.
- D. Enclosure Manufacturer: Rain Bird Model# LXMMPED
  1. Locking pedestal enclosure, 10.5" wide x 23.5" high x 5" deep.
  2. Securely mount pedestal and controller with installation hardware.
  3. Waterproof enclosure, with locking cover and matching keys; refer to drawings and manufacturer's grounding requirements.
- E. Two Wire Cable
  1. Controller to decoder wire use 14 gauge solid copper insulated wire, twisted together, loose tube-high density polyethylene jacket. Paige Electric Co., model P7354D.
  2. Decoder to Solenoid wire use 14 gauge solid copper insulated wire, parallel wire held by webbing, in various color. Paige Electric Co., model ICD.
  3. Where spliced wires are required, splices shall be housed in a grey plastic electric pull box.
  4. Waterproof wire connector manufacturer: 3M Direct Bury Splice Kit. Model# DBR/Y-6.

## 2.11 CONDUIT

- A. All conduit and fittings to be PVC schedule 40, color: grey.
- B. Pull tape manufacturer: Fibertek, Inc. Model# WPI250.
  1. Electrical pull tape to be 1/2" woven polyester tape with a minimum of 1250 pounds tensile strength and less than 0.10 coefficient of friction.
  2. All pull tape to be continuous with out slicing or knots.
  3. Provide couplers or bushings on cut pipe end to prevent damage to wires.

## 2.12 GROUNDING

- A. Earth grounding for irrigation equipment shall meet or exceed article 250 of National Electrical Code (NEC) and be UL listed.

- B. Grounding rod shall be minimum copper clad 5/8" diameter by 10 feet long.
- C. OR Grounding plate
- D. Bare Copper Wire shall be minimum 6 gauge soft-annealed uncoated wire.
- E. Grounding rod connection to be exothermic weld or clamp.
  - 1. Grounding rod clamp shall be brass and must securely attach grounding rod and wire.
- F. Grounding to have a resistance of 25 ohms or less.
- G. Back fill shall be highly conductive material. Where needed use electrical grounding backfill products like Powerfill by Loresco.

## 2.13 BOXES VALVES AND ELECTRICAL PULL

- A. Electrical Pull Box:
  - 1. Manufacturer: Carson. Body model# 910-10 and lid model# 910-4B. Bolt down kit, T-cover lid, body and lid color: grey.
  - 2. Or equal
- B. Remote Control Valve:
  - 1. Manufacturer: Carson. Body model# 1220-12 and lid model# 1220-4B. Bolt down kit, T-cover lid, body and lid color: Purple.
- C. Quick coupler:
  - 1. Manufacturer: Rainbird. Body model# VB-STD. Bolt down kit, T-cover lid, body color: black and lid color: Purple.
- D. Isolation Valve:
  - 1. Manufacturer: Rainbird. Body model# VB-10RND. Bolt down kit, T-cover lid, body color: black and lid color: Purple.
- E. Flush Valve:
  - 1. Manufacturer: Rainbird. Body model# VB-10RND. Bolt down kit, T-cover lid, body color: black and lid color: Purple.
- F. Air/ Vacuum Relief Valve:
  - 1. Manufacturer: Rainbird. Body model# VB-7RND. T-cover lid, body color: black and lid color: Purple.
- G. Subterranean Drip Emitter Box:
  - 1. Manufacturer: Rainbird. Body model# SEB 7XB. T-cover lid, body color black and lid color: Purple.

- H. Drain rock shall be 3/4" washed crushed rock.
- I. Hardware cloth shall be galvanized 16 gauge 1/4" mesh.
- J. Use valve box extension where needed to install boxes at proper height.

### 3. EXECUTION

#### 3.1 GENERAL

- A. Irrigation system shall meet all federal, state, and local codes, regulations and ordinances.
- B. Verify all underground utilities by contacting Common Ground Alliance (C.G.A.) at 811 a minimum of 2 working days before any excavation work begins on site.
- C. If contractor finds utilities on site that are not shown on plans, contractor shall contact Landscape Architect. Found utilities that cross irrigation lines shall be shown on Record Drawings.
- D. Verify water pressure and available flow prior to construction. Notify Landscape Architect if water pressure or flow will prevent the irrigation system from functioning properly.

#### 3.2 EARTHWORK

- A. Excavating, trenching, and backfilling are specified in Division 31 - Section "Earth Moving."
- B. Install warning tape directly above pressure piping, 12" below finished grades and above irrigation pipe.

#### 3.3 PREPARATION

- A. Set stakes to identify locations of proposed point of connection, backflow preventer, master valve and flow sensor assembly, controller, quick coupler, remote control valves, isolation valves, and mainline pipe. Contact Landscape Architect within 48 hours for approval before excavation.

#### 3.4 WATER, ELECTRICAL, & COMMUNICATION CONNECTIONS

- A. Water Supply

1. Contact the Owner a minimum of five (5) working days before beginning any work that will disrupt existing irrigation system.
- B. Electrical Supply
1. Contractor is responsible for coordination of electrical supply connection to controller enclosure.
  2. Electrical work shall be performed by licensed electrical contractor. Material and workmanship for electrical service shall meet all federal, state, and local codes, regulations and ordinances.
- C. Communication
1. Contractor is responsible for coordination of data line connection to controller enclosure.

### 3.5 PIPING INSTALLATION

- A. Install piping free of sags and bends. Lay piping on solid sub-base, uniformly sloped without humps or depressions.
- B. Install groups of pipes parallel to each other and with a minimum of 4" of separation. Pipes shall not lie on top of another pipe.
- C. Install fittings for changes in direction and branch connections.
- D. Install PVC piping in dry weather when temperature is above 40 deg F. Allow joints to cure at least 24 hours at temperatures above 40 deg F before testing.
- E. Install piping in sleeves under parking lots, roadways, and sidewalks.
- F. Remove all rough edges and burrs from PVC pipe by reaming cut ends. All irrigation pipe cuts shall be square. Remove all debris from pipe before installing.
- G. PVC pipe shall not lie on top of another pipe. All pipe should have 4" separation between pipes.
- H. Cap all pipe ends during construction to prevent debris from entering pipe.
- I. Snake pipe in trench one (1) foot per every one hundred (100) feet for thermal expansion.
- J. Mainline changes in depth and direction shall be done with 45 degree fittings.

### 3.6 JOINT CONSTRUCTION

- A. Ream ends of pipes and tubes and remove burrs.

- B. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Join pipe fittings and valves as follows:
  - 1. Apply appropriate PTFE/ Teflon tape or thread compound to external pipe threads. Provide three wraps around male thread.
  - 2. Tighten joints to hand tight, plus one turn with a strap wrench
  - 3. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
  
- C. PVC Piping Solvent-Cemented Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:
  - 1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
  - 2. PVC P Piping: Join schedule number, ASTM D 1785, PVC pipe and PVC socket fittings according to ASTM D 2672
  - 3. Allow 30 minute cure time for handling and 24 hours of cure time before allowing water in the pipe..

### 3.7 CONDUIT

- A. Remove all rough edges or burrs from conduit pipe by reaming cut ends. All conduit cuts shall be square.
- B. Install coupler or bushing on cut pipe ends.
- C. All 2-wire cable shall be in PVC conduit.

### 3.8 SLEEVES

- A. Install sleeve in all locations where irrigation pipe and controller wire cross beneath pavement or other hardscape elements.
- B. Irrigation controller wire shall not share sleeve with 120 volt and higher voltage wire.
- C. Contractor shall coordinate the installation of sleeves with other trades.
- D. Sleeves shall have minimum of 25% void space. Contractor is responsible for sizing sleeve based on field conditions. Size sleeve based on conduit and irrigation pipe size.

### 3.9 BACKFILLING

- A. Backfill shall be of approved screen material.
- B. With the exception of center loading, irrigation trenches shall not be backfilled until completion and passing of tests.

- C. Trench should be cleaned of debris before backfilling.
- D. Backfill shall be compacted in 6" lifts using vibrating plate. Compaction of backfill shall be equal to adjacent undisturbed soil.
- E. Contractor shall correct any settling with more backfill and compaction.

### 3.10 REMOTE CONTROL VALVES

- A. Flush mainline before installing remote control valves
- B. Install valves in landscape planter. Do not install valves in roadways or paved areas.
- C. Group remote control valves and other valves whenever possible.
- D. Install per drawings and manufacturer's specifications.
- E. Install valve in valve box to provide proper operation and maintenance of valve.
- F. First downstream fitting past valve shall be located min. 18" from valve.

### 3.11 DRIP IRRIGATION

- A. Flush lateral before installing drip tubing.
- B. Install drip tubing on uniformly prepared bed. Drip tubing emitters should be offset to create a triangular spacing.
- C. Install fitting for all 90 degree changes of direction in line.
- D. Use 6" wire staples every three (3) feet to secure drip tubing.
- E. Install air relief and vacuum relief valves in valve boxes, at highest point of landscape planter.
- F. Install automatic flush and ball valves at drip exhaust header. Refer to drawings for location of flush valves.
- G. The pressure at the end of the drip tubing should have a maximum of 20% drop in pressure from the beginning of the drip line.
- H. Install per drawings and manufacturer's specifications.



### 3.12 AUTOMATIC IRRIGATION CONTROLLER

- A. Equipment Pedestal Mounting: Install on 6" thick concrete pad. Refer to drawings for location.
  - 1. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 2. Install anchor bolts for proper attachment to supported equipment.
  - 3. Orient enclosure to provide access to controller.
- B. Equipment Wall Mounting: Install wall mounted controller on building wall shown on plans and coordinated with building owner representative.
  - 1. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 2. Install anchor bolts for proper attachment to supported equipment.
  - 3. Orient enclosure to provide access to controller.
- C. Provide connection to electrical power supply and data line as required by controller.
- D. All remote control valves, master valves, and flow sensors to be connected to controller.
- E. Install all ET sensor, weather stations, and rain/ freeze sensor equipment. Contractor to program and fine tune controller to operate with sensor equipment during maintenance period. Fine tuning of schedule and ET sensor should be completed at the end of maintenance period.
- F. Irrigation schedule shall not exceed water budget established for project. Water budget and irrigation schedule shown on plans.
- G. Install per drawings and manufacturer's specifications.

### 3.13 FIELD QUALITY CONTROL

- A. Contractor to make adjustments to irrigation components to provide optimum performance of system. Adjust irrigation components to prevent excessive watering onto paved surfaces, windows, and building walls.
- B. Adjust sprinklers and devices, except those intended to be mounted aboveground, so they will be flush with, or not more than 1/2" above, finish grade or compacted mulch.
- C. Any irrigation product will be considered defective if it does not pass tests and inspections.
- D. Improperly installed equipment shall be reinstalled or replaced to meet Construction Documents.

### 3.14 CLEANING

- A. Flush dirt and debris from piping before installing sprinklers and other devices.
- B. Upon completion of work, remove all site machinery, tools, construction material, and any rubbish.

### 3.15 MAINTENANCE

- A. Provide maintenance as per Division 32 - Section "Planting"

### 3.16 RECORD DRAWINGS

- A. Prior to Pre-Maintenance Review, obtain from the Owner's Authorized Representative a reproducible copy of the Drawings. Using computer aided drafting, duplicate information contained on the Record Drawings maintained on site.
- B. Label each sheet "Record Drawing".
- C. Record pipe and wiring network alterations. Record work which is installed differently than shown on the construction drawings. Record accurate reference dimensions, measured from at least two permanent reference points, of each irrigation system valve, each backflow prevention device, each controller or control unit, each sleeve end, and other irrigation components enclosed within a valve box.

### 3.17 ITEMS FURNISHED TO OWNER

- A. The following items to be furnished to the Owner by the contractor at the completion of the project:
  - 1. Two (2) keys to the control and enclosure
  - 2. Two (2) quick coupler keys and hose swivels
  - 3. One (1) isolation valve opening key
  - 4. One (1) hand held remote control for controller, if specified.
  - 5. One (1) of each specialized tool used to adjust irrigation equipment
  - 6. All manuals for irrigation equipment
  - 7. One (1) copy of irrigation schedule
  - 8. One (1) copy of the approved irrigation submittal.

### 3.18 CONTROLLER CHARTS

- A. Prior to completion of the maintenance period, prepare a reduced copy of the as-built plans, with valve numbering/zones clearly highlighted at the reduced scale. The reduced plan shall be sized to fit flat within the controller, laminated in plastic, and placed in the controller.

### 3.20 IRRIGATION WATER AUDIT:

- A. An irrigation audit is required, per AB 1881. Irrigation audit shall be conducted by a certified landscape irrigation auditor.
- B. IRRIGATION DESIGN  
As designed, the irrigation system is compliant with AB1881. The installation and tuning of the irrigation system shall also meet the requirements for a compliant irrigation audit.
- C. AUDIT ATTENDEES  
At a minimum the following people shall be in attendance at the time of the Irrigation Audit: A certified landscape irrigation auditor, an Owner's representative, a landscape contractor who is knowledgeable of the irrigation design and installation, and who has access to the irrigation controller, and tune or repair the irrigation system if necessary during the audit.
- D. AUDIT PROCEDURE  
Audit may only be performed after the completion of irrigation and landscape irrigation. No other irrigation water may be in use at time of irrigation audit. A project with spray irrigation cannot be audited when winds exceed 5 mph.
  - 1. Inspection- Prior to start of audit, inspect and confirm installation meets design intent of irrigation drawings. Inspect irrigation controller installation and programmed schedule, and ET sensor.
  - 2. Measurement- Measure static and dynamic pressure at irrigation point of connection.
  - 3. Sample areas- Audit shall include a representative sample of each type of irrigation (spray, drip) on each type of hydrozone. Linking of irrigation stations is allowed.
  - 4. Spray irrigation- Auditing of spray irrigation valves shall measure:
    - a. Pressure at first and last spray head
    - b. Flow rate of station
    - c. Distribution uniformity
  - 5. Drip irrigation- Auditing of drip irrigation valves shall measure:
    - a. Pressure in drip line at supply and exhaust
    - b. Flow rate of station.

END OF SECTION

## SECTION 32 90 00 - PLANTING

## 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. Provide all labor, material, equipment and services necessary to provide all landscape planting, complete in place, as shown and specified.
- B. Section Includes:
  - 1. Planting and landscape areas.
  - 2. Hydroseeding.
  - 3. Sodding.
  - 4. Landscape edgings.
  - 5. Tree root barriers.
  - 6. Tree stabilization.
- C. Subgrade Elevations
  - 1. Excavation filling and grading required to establish elevations is shown on drawings. Coordinate all work with grading contractor in order to arrive at rough grades that will allow tolerance for topsoil in planting areas, soil amendments and ornamental mulch as required in other sections of this specification. Contractor to assume tolerance of rough grades established at +/- .1 feet (1 tenth of a foot).
- D. Related Sections:
  - 1. Division 01 Section "Tree and Plant Protection" for protection of existing trees and plant materials.
  - 2. Division 31 Section "Site Clearing" for topsoil stripping and stockpiling.
  - 3. Division 31 Section "Earth Moving" for excavation, filling and backfilling, and rough grading.
  - 4. Division 32 Section "Planting Irrigation" for irrigation.
  - 5. Division 33 Section "Subdrainage" for subsurface drainage.

## 1.3 SUBMITTALS

- A. Informational submittals shall include but not be limited to the following:
  - 1. Pesticides and herbicides: Include product label and manufacturer's application instructions specific to this Project.
  - 2. Soil Fertility and Agricultural (Horticultural) Suitability Analysis.

- a. After completion of rough grading and prior to soil preparation, the Contractor shall obtain agronomic soils tests for planting areas. A minimum of two (2) samples of planting areas shall be required. Tests shall be performed by an approved agronomic soil testing laboratory and shall include a complete soil suitability analysis with written recommendations for soil amendment, fertilizer and chemical conditioner, application rates for soil preparation, and post-maintenance fertilizer program.
  - b. The soils report recommendations shall take precedence over the minimum soil amendment and fertilizer application rates, as specified, when they exceed the specified minimums.
  - c. The Soil Analysis report shall be submitted to the Landscape Architect in a timely manner to make necessary adjustments to the project documents.
  - d. The Soil Analysis report shall be submitted to the Landscape Architect as part of the Certificate of Completion requirements. The Landscape Architect shall submit documentation verifying implementation of the soil analysis report recommendation to the local agency with the Certificate of Completion.
3. Fertilizer: Chemical and percentage composition, and manufacturers or vendor's certified analysis.
  4. Plant materials: Include botanical and common name, quantities, sizes, quality, and sources for all plant materials.
  5. Seed mixtures for hydroseed: Botanical and common name, percentage by weight, percentages of purity, germination and weed seed for each grass seed species.
  6. Landscape edgings: Type, size, manufacturer, required stakes (if any).
  7. Tree root barriers: Type, size, manufacturer.
  8. Tree staking.
  9. Submit other data substantiating that materials comply with specified requirements. Such certificates may be tags, labels, and/or manufacturers literature. All submittals shall be reviewed and accepted by Landscape Architect before contractor begins work.
  10. Planting schedule: Submit proposed planting schedule at least two weeks prior to planting any materials, indicating dates for each type of landscape work during normal seasons for such work in areas of the site. Correlate with specified maintenance periods to provide maintenance from date of substantial completion. If dates need to be revised after acceptance of planting schedule, document reasons for delays and submit for acceptance.
- B. Material submittals shall include but not be limited to the following:
1. Soil amendments: Type, size, composition, and manufacturers or vendor's certified analysis. 1-pint in sealed labeled plastic bag.
  2. Mulch: 1-pint in sealed labeled plastic bag.

#### 1.4 SITE VISITS

- A. The Contractor is responsible for notifying the Landscape Architect for site visits to review work as follows. Provide Landscape Architect 48 hours minimum notice to schedule these visits, unless otherwise indicated.

1. Pre-construction conference with general contractor, grading contractor, landscape contractor, and landscape architect, at project site. 7 days minimum notice. The purpose of this conference will include:
  - a. Review of Contractor's questions regarding project.
  - b. Review of administrative and inspection procedures that will occur during construction.
  - c. Review of Contractor's work schedule for project.
  - d. Tour, inspect, and discuss site conditions (if necessary).
2. Review of soil sampling.
3. Review of planting stock at nursery, or upon arrival on site.
4. Review of all landscape areas in preparation for planting.
  - a. All landscape areas have been cleaned of all construction debris, including gravel, concrete, concrete washout, cement plaster, paint, asphalt, etc.
  - b. Fine grading- allow for inclusion of all amendments, settling, etc.
  - c. Irrigation coverage.
  - d. Review of base preparation and edging for synthetic turf.
5. Review of plant material locations.
  - a. The Landscape Architect may adjust locations of any plant materials prior to installation.
6. Punch list at substantial completion (prior to installation of bark mulch). 7 days minimum notice.
7. Final completion. Final review of entire project, including grading, irrigation, planting and completion of all punch list items (to begin Maintenance Period). 7 days minimum notice.
8. Final acceptance of project (at end of Maintenance Period). 7 days minimum notice.
  - a. Final application shall have been made to all landscape areas with slow-release maintenance fertilizer.

## 1.5 QUALITY ASSURANCE

- A. Subcontract: Subcontract landscape work to a single firm specializing in commercial landscape installation.
- B. Soil-Testing Laboratory Qualifications: An independent laboratory or university laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- C. Soil Analysis: For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; sodium absorption ratio; deleterious material; pH; and mineral and plant-nutrient content of the soil.
  1. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.
  2. The Landscape Architect shall oversee soil sampling, with depth, location, and number of samples to be taken. A minimum of two representative samples shall be taken from varied locations for each soil to be used or amended for planting purposes.
  3. Report suitability of tested soil for plant growth.

- a. Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. or volume per cu. yd. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
  - b. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.
- D. Source Quality Control:
1. General: Comply with regulations applicable to shipping of landscape materials.
  2. Analysis and Standards: All materials shall be of standard, approved and first-grade quality and shall be in prime condition when installed and accepted. Any commercially processed or packaged material shall be delivered to the site in the original unopened container bearing the manufacturer's guaranteed analysis. The Contractor shall supply the Landscape Architect with analytical data from an approved laboratory source illustrating compliance of bearing the manufacturer's guaranteed analysis of all supplied materials.
- E. Topsoil: Obtain topsoil only from naturally, well-drained sites where topsoil occurs in a depth of not less than 4"; do not obtain from bogs or marshes. The Landscape Architect reserves right to have topsoil tested and analyzed by an independent laboratory before delivery to site.
- F. Trees, 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 Z60.1-1980 "American Standard for Nursery Stock". Provide healthy, vigorous stock, grown in recognized nurseries in accordance with good horticultural practice and free of disease, insects, insect eggs, larvae and defects such as knots, sun-scald, injuries, abrasions, overlapping surface roots, or disfigurement. Central leaders of all trees shall be intact, undamaged, with evenly spaced lateral branches.
- G. The contractor is responsible for ordering and reserving plant materials immediately upon bid award to insure plant materials meet size and quality requirements as specified herein. Plant material of substandard size will be rejected.
- H. Label at least one tree and one shrub of each variety in each grouping with a securely attached waterproof tag bearing legible designation of botanical and common name. Where formal arrangements and consecutive order of trees is shown, select stock for uniform height/spread, and label with number to assure symmetry in planting.
- I. Stock review: The Landscape Architect will review all plant materials either at place of growth or at site before planting for compliance with requirements for genus, species, variety, size and quality. Landscape Architect retains right to further review trees and shrubs for size and condition of balls and root systems, insects, injuries and latent defects, and to reject unsatisfactory or defective material at any time during progress of the work. Remove rejected vegetation immediately from project site. Contractor shall request review of such stock by Landscape Architect by delivering notice in writing 48 hours in advance.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable. Protect materials from deterioration during delivery, and while stored on site.
- B. Sod: Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage and drying.
- C. Bulk Materials:
  - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
  - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
  - 3. Accompany each delivery of bulk fertilizers and soil amendments with appropriate certificates.
- D. Trees and Shrubs: Do not prune prior to delivery. Do not bend or bind trees or shrubs in such manner as to damage bark, break branches or destroy natural shape. Provide protective covering during delivery, and provide protection on site from traffic, pedestrians, and deleterious effects of climate while planting operations are in progress. Dropped or damaged stock will not be accepted.
- E. Deliver trees and shrubs after preparations for planting have been completed and plant immediately after approval of plant materials locations. If planting is delayed more than 6 hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist by covering with mulch, burlap or other acceptable means of retaining moisture. Do not remove container grown stock from containers until planting time.
- F. Plant material shall not be stored on the jobsite for more than 48 hours before planting. Contractor shall schedule nursery deliveries in sub-groups as necessary to comply with this requirement. Plant materials that have been damaged in any way will be discarded and if installed, shall be replaced with undamaged materials at the Contractor's expense.

## 1.7 PROJECT CONDITIONS

- A. Proceed with and complete landscape work as rapidly as portions of site become available, working within seasonal limitations for each kind of landscape work required.
- B. Contractor shall verify locations of all existing utilities, whether shown on plans or not. The Contractor shall call 811 two (2) working days in advance of performing any excavation work.



- C. After determining location of underground utilities, perform work in a manner which will avoid possible damage. Hand excavate, as required. Maintain grade stakes set by others until removal is mutually agreed upon by parties concerned.
- D. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify Landscape Architect before planting.
- E. No landscape materials may be planted before an irrigation operation and coverage test is completed and approved by the Landscape Architect.
- F. No landscape materials may be planted before finish grade is inspected and approved by the Landscape Architect.
- G. Planting Time: Plant or install materials during normal planting seasons for each type of landscape work required.
- H. Coordination with Lawns: Plant trees and shrubs after final grades are established, after irrigation system is operable, and prior to planting of lawns, unless otherwise acceptable to Landscape Architect. If planting of trees and shrubs occurs after lawn work, protect lawn areas and promptly repair damage to lawns resulting from planting operations.
- I. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

#### 1.8 SPECIAL PROJECT WARRANTY

- A. Warranty all plant materials and other materials installed under the Contract for a period of one year (from beginning of maintenance period) against defects including death and unsatisfactory growth, or faulty performance, inferior materials and/or workmanship or improper maintenance resulting from neglect, abuse or damage by others, as determined by the Landscape Architect. Materials shall be replaced at the Contractor's expense.
- B. Synthetic Turf: Contractor shall provide a warranty to Owner covering defects in materials and workmanship for a period of eight (8) years from the date of substantial completion. Turf manufacturer must verify that their representative has inspected the installation and that the work conforms to the manufacturer's requirements. The manufacturer's warranty shall include general wear, and damage caused from UV degradation. The warranty excludes vandalism.
- C. Replacement: Any materials found to be dead, missing, or not in a satisfactory or healthy condition during the maintenance period shall be replaced immediately. The Landscape Architect shall be sole judge as to the condition of material. Material to be replaced within the guarantee period shall be replaced by the Contractor within five (5) days of written notification by the Landscape Architect. All replacement materials and installations shall comply to the Plans and Specifications. Any plant missing due to

suspected theft shall be replaced by the Contractor. If the Contractor suspects that theft may be a problem, the Contractor shall provide written documentation to the Landscape Architect that security on this site needs to be intensified. The Contractor may relieve himself of theft responsibility if after the security notice, with no result, a written notice to the Landscape Architect shall be given that plant material will not be replaced for theft or vandalism due to lack of site security being maintained. This procedure may take place only during the Landscape Maintenance Period.

## 1.9 MAINTENANCE SERVICE

- A. General: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3.
- B. Continuously maintain entire project area during the progress of the work and during the ninety (90) calendar day maintenance period until final acceptance of the project by the Landscape Architect.
- C. Maintenance period shall not start until Final Completion, when all elements of construction, planting and irrigation for the entire project are in accordance with Plans and Specifications. A prime requirement is that all turf grass and landscape areas shall be planted, and that all turf grass areas shall show an even, healthy stand of grass seedlings and which shall have been mown twice. If such criteria are met to the satisfaction of the Landscape Architect, a written notification shall be issued to the Owner establishing the effective beginning date of maintenance period.
- D. Any day of improper maintenance, as determined by the Landscape Architect, shall not be credited as an acceptable maintenance period day. The maintenance period shall be extended on a daily basis if the work is not in accordance to the Plans and Specifications. Project shall not be segmented into maintenance areas or phases, unless authorization of the Landscape Architect is obtained.
- E. Maintenance shall continue beyond the ninety (90) day maintenance period, as required, until final acceptance is given by the Landscape Architect.
- F. Contractor shall provide protection to the project site during the maintenance period.

## PART 2 - PRODUCTS

### 2.1 GENERAL

- A. The following organic amendments and fertilizers are to be used for bid price basis only. Specific amendments and fertilizers specification shall be made after rough grading operations are complete and soil samples are tested by the Contractor and approved by the Landscape Architect. The amounts listed in the Preparation section are considered minimum amounts for the project unless directed otherwise by the Landscape Architect.

## 2.2 ORGANIC SOIL AMENDMENTS

- A. Organic amendment shall be nitrogen stabilized wood residual containing 0.56 to 0.84% N based on dry weight.
- B. Particle Size:
  - 95-100% passing 6.35 mm standard sieve
  - 80-100% passing 2.33 mm standard sieve
- C. Salinity: The saturation extract conductivity shall not exceed 3.5 milliohms/centimeter at 25 degrees centigrade as determined by the saturation extract method.
- D. Iron content: Minimum 0.08% dilute acid soluble Fe on dry weight basis.
- E. Ash: 0-6.0% (dry weight).
- F. As available from:
  - 1. A&S Landscape Materials  
565 A Jacoby Street  
San Rafael, CA 94901  
(415) 456-1381  
OR
  - 2. Marin Landscape Materials  
7596 Redwood Blvd  
Novato, CA 94945  
(415) 897-1337
  - 3. OR Equal

## 2.3 SOIL AMENDMENTS

- A. Soil Sulfur: Agricultural grade sulfur containing a minimum of 99% sulfur (expressed as elemental).
- B. Iron Sulfate: 20% Iron (expressed as metallic iron), derived from ferric and ferrous sulphate, 10% sulfur (expressed as elemental).
- C. Calcium Carbonate: 95% lime as derived from oyster shells.
- D. Gypsum: Agricultural grade product containing 98% minimum calcium sulphate.

## 2.4 FERTILIZERS

- A. Retain 1 bag of each type fertilizer on-site for inspection by Landscape Architect prior to disposal.
- B. Planting Fertilizer: Pelleted or granular form shall consist of the following percentages by weight and shall be mixed by commercial fertilizer supplier:
  - 1. 16% nitrogen, 6% phosphoric acid, 8% potash
- C. Planting Tablets:

1. Shall be slow-release type with potential acidity of not more than 5% by weight containing the following percentages of nutrients by weight:
    - 16% nitrogen
    - 6% phosphoric acid
    - 8% potash
    - 2.6% combined calcium
    - 1.6% combined sulfur
    - 0.35% iron (elemental) from ferrous sulfate
  2. Planting tablets shall be one of the following:
    - a. 21 gram tablets as manufactured by Agriform or Best Tabs
    - b. 7 gram tablets as manufactured by GroPower
    - c. Or equal
  3. Planting tablets shall be applied per manufacturer's instructions.
- D. Sulphate of Potash: 0-0-50.
- E. Single Super phosphate: Commercial product containing 18-20% available Phosphoric Pentoxide, or equal.
- F. Urea Formaldehyde: 38-0-0.
- G. Slow-release maintenance landscape fertilizer shall be "GroPower Controlled Release Nitrogen 12-8-8" 6-8 month formulation:  
12% nitrogen, 8% phosphoric acid, 8% potash
- H. Native Grass Sod maintenance fertilizer shall be:
1. Best "Endure 15-15-15 slow release" fertilizer  
15% nitrogen, 15% phosphoric acid, 15% potash
  2. Or equal.

## 2.5 SOIL

- A. Topsoil: Site to be rough graded to elevations shown on Civil Drawings. Top soil is required behind curb areas. Top soil is required in all planting areas to a minimum depth of 9". Provide on-site, import, or non-processed topsoil in planting areas as needed to complete rough grading which is fertile, friable and natural. Topsoil shall be from agricultural sources, surface soil, reasonably free of subsoil, clay lumps, brush, weeds and other litter, and free of roots, stumps, stones larger than 1" in any dimension, and other extraneous or toxic matter harmful to plant growth.
- B. All topsoil to be used for planting, regardless of whether import or on-site in origin, shall be tested as described in this Section.
- C. Import Topsoil: ASTM D 5268 topsoil, with pH range of 5.5 to 7.5, a minimum of 4 percent organic material content. Mix topsoil with the following soil amendments in the following quantities to produce planting soil:
1. Coarse Sand:
    - a. Particle Size Range: 0.5-2.0 mm
    - b. Max. % weight: 15

- c. Min. % weight: 0
- 2. Silt Plus Clay
  - a. Particle Size Range: <0.05 mm
  - b. Max. % weight: 50
  - c. Min. % weight: 25
- 3. Silt
  - a. Particle Size Range: 002-0.05 mm
  - b. Max. % weight: 30
  - c. Min. % weight: 10
- 4. Clay
  - a. Particle Size Range: 0-.002 mm
  - b. Max. % weight: 25
  - c. Min. % weight: 10
- 5. Gravel
  - a. Particle Size Range: 2-13 mm
  - b. Max. % weight: 15
  - c. Min. % weight: 0
- 6. Rock
  - a. Particle Size Range: >1/2 inch
  - b. Max. % weight: 10% by volume; None > 1 inch
  - c. Min. % weight: 0
- 7. Organic Matter
  - a. Particle Size Range: n/a
  - b. Max. % weight: 15
  - c. Min. % weight: 0

2.6 MULCH

- A. Mulch shall be walk-on shredded fir bark mulch.
- B. Physical properties:
 

1. <u>Percent Passing</u>	<u>Sieve Size</u>
90-100	1" Dia.
80-100	1/2" Dia.
20-60	1/4"
- C. Chemistry:
  - 1. Acid in reaction, max. pH 5.0
  - 2. Maximum ash Chemistry: 7% based on dry weight.
  - 3. Minimum moisture 35% at time of delivery based on fresh weight.
- D. As available from:
  - 1. A&S Landscape Materials  
565 A Jacoby Street  
San Rafael, CA 94901  
(415) 456-1381  
OR
  - 2. Marin Landscape Materials  
7596 Redwood Blvd  
Novato, CA 94945

(415) 897-1337

3. OR Equal

2.7 HERBICIDES

- A. General: Herbicide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for project conditions and application. Do not use restricted herbicides unless authorized in writing by authorities having jurisdiction.
- B. Pre-Emergent Herbicide (Selective and Non-Selective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.
  - 1. Roundup (Glyphosate)
  - 2. Approved Equal

2.8 PLANT MATERIAL

- A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features shown Drawings and complying with ANSI Z60.1 and in accordance with California State Department of Agricultural regulations for nursery inspections, rules and ratings; and with healthy root systems. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.
  - 1. Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch in diameter; or with stem girdling roots will be rejected.
  - 2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.
  - 3. Plants of a larger size may be used if acceptable to Landscape Architect, with a proportionate increase in size of roots or balls.
- B. Labeling: Label at least one plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant as shown on Drawings.
- C. If formal arrangements or consecutive order of plants is shown on Drawings, select stock for uniform height and spread, and number the labels to assure symmetry in planting.
- D. The minimum acceptable planted height of 15 gallon trees is 6'-6".

- E. Provide single stem trees except where special forms are shown or listed.

## 2.9 SEED

- A. Applied by Hydroseeder
  - 1. Hydromulch Fiber: Secondary Paper, application rate of 500 lbs./acre.
  - 2. Tackifier: Plantago, applied at 100 lbs/acre.
  - 3. California Native Wildflower Seed Mix
  - 4. 20 lbs per acre

## 2.10 SOD

- A. Furnish viable sod of uniform density, color, and texture, strongly rooted, and capable of vigorous growth and development when planted.
- B. Native Grass Sod
  - 1. Native Grass Blends:
    - a. Native Preservation Mix:  
Nodding needle grass, Nassella cernua  
Purple needle grass, Nassella pulchra  
Junegrass, Koeleria macrantha  
Molate red fescue, Festuca rubra
  - 2. As available from:
    - a. Delta Bluegrass Company  
P.O. Box 307  
Stockton, California 95201  
(800) 637-8873

## 2.11 LANDSCAPE EDGINGS

- A. Metal Edging: Standard commercial edging, fabricated in sections of standard lengths, with loops stamped from or welded to face of sections to receive stakes.
  - 1. Manufacturers: Provide products by one of the following:
    - a. Border Concepts, Inc.
    - b. Collier Metal Specialties, Inc.
    - c. Russell, J. D. Company (The).
    - d. Sure-Loc Edging Corporation.
  - 2. Edging Size: 1/4 inch wide by 5 inches deep.
  - 3. Stakes: Tapered steel, a minimum of 15 inches long.
  - 4. Accessories: Standard tapered ends, corners, and splicers.
  - 5. Finish: Standard paint.
  - 6. Paint Color: Black.

## 2.12 TREE ROOT BARRIERS

- A. "Deep Root" UB-24-2
- B. Or equal

## 2.13 TREE STABILIZATION

- A. Tree stakes
  1. Sound new lodge pole pine 2" minimum diameter with minimum height (above ground) of 6'-0" for 5 gallon container and 8'-0" for 15 gallon container. Stakes shall have been treated with copper naphthanate to a minimum wood depth of 1/16". All stakes shall be free of knots larger then 1/2" in diameter, holes and other defects.
  2. Tree Straps: VIT "Cinch-tie" tree straps. Tree straps shall be attached to tree stake as shown in staking detail on the plans.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
  1. Protect adjacent and adjoining areas from hydroseeding overspray.
  2. Protect grade stakes set by others until directed to remove them.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- C. Soil Preparation
  1. All planting areas shall have a minimum of nine inches of clean topsoil. Soil shall be cleared of all stones, stumps, debris, etc. larger than 1 inch in diameter, that are brought to the surface as a result of cultivation.
    - a. Cultivation shall be by rototilling or ripping equipment.
  2. After approximate finished grades have been established, soil shall be conditioned and fertilized in the following manner:
    - a. Amendments shall be uniformly spread and cultivated thoroughly by means of mechanical tiller into the top six inches of soil.
    - b. The following organic soil amendments and fertilizer rates, and quantities are minimums and are to be used for bid basis only. Specific rates and quantities will be made after rough grading operations are complete and soil samples are tested by the Contractor and approved by the Landscape Architect.
    - c. Application rates: (Per 1,000 square feet)
      - 1) Organic amendment- six cubic yards for groundcover and shrub areas; three cubic yards for lawn areas.
      - 2) Fertilizer- 15 lbs.



- 3) Gypsum- 200 lbs.
  - 4) Soil sulphur- 20 lbs.
  - 5) Iron- 2 lbs.
  - 6) Calcium carbonate- 2 lbs.
- D. Loosen subgrade of planting areas to a minimum depth of 9 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them offsite.
- E. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that will be planted within 24 hours.
- F. Parking Lot Planters:
1. All aggregate base rock, and other non-organic materials shall be removed from all parking lot planter areas down to the level of native soil. Backfill planters to specified finish grade with native or approved topsoil, and amend as specified.
- G. Final Grades:
1. The following areas shall be graded so that the final grades shall be established below adjacent paved areas, sidewalks, valve boxes, headers, clean outs, drains, manholes, etc. as follows:
    - a. Shrub/groundcover areas: 2-1/2 inches.
    - b. Sod areas: 1-1/2 inches.
    - c. Hydroseed areas: 1 inch
  2. Surface drainage shall be away from all building foundations, 2% minimum.
  3. Legally dispose of excess or unacceptable soil from the site at no expense to the Owner.
- H. Before planting, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

### 3.2 PRE-PLANT WEED CONTROL

- A. Irrigate all areas to be planted for 7 days to achieve weed germination.
- B. Spray all weeds with a non-selective systemic contact herbicide, as recommended and applied by and approved licensed landscape pest control advisor and applicator. Leaved sprayed plants intact for at least fourteen days. Continue to irrigate during this period, after the initial 48 hours. Clear and remove these existing weeds by grubbing off all plant parts at least a 1/4 inch below the soil surface in the entire area to be planted.
- C. Apply a second application of herbicide to remaining weeds.
- D. Planting may begin 24 hours after the second application has been completed.

### 3.3 EXCAVATION FOR TREES AND SHRUBS

- A. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Landscape Architect's acceptance of layout before excavating or planting. Make minor adjustments as required.
- B. Planting Pits and Trenches: Excavate circular planting pits. Create a roughened edge along the inside walls of the planting pit. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling.
  - 1. Excavate approximately three times as wide as ball diameter.
  - 2. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
  - 3. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
- C. Subsoil and topsoil removed from excavations may be used as planting soil, provided they meet the requirements of planting soil noted above.
- D. Obstructions: Notify Architect if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.
- E. Drainage: Notify Architect if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.
- F. Fill excavations with water and allow to percolate away before positioning trees and shrubs.

### 3.4 PLANTING

- A. Set plant plumb and in center of planting pit or trench with root flare 1-inch above adjacent finish grades shrubs, vines and groundcover; 2- inches at trees.
  - 1. Use planting soil for backfill.
  - 2. Carefully remove root ball from container without damaging root ball or plant.
  - 3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
  - 4. Place planting tablets in each planting pit when pit is approximately one-half filled; in amounts recommended in soil reports from soil-testing laboratory. Place tablets beside the root ball about 1 inch from root tips; do not place tablets in bottom of the hole.
  - 5. Continue backfilling process. Water again after placing and tamping final layer of soil.
- B. When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be

above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.

- C. After installation and before Substantial Completion, remove all nursery tags, tie tape, labels, wire, and other debris from plant material, planting areas, and project site.

### 3.5 TREE STABILIZATION

#### A. Staking

1. Retain one of first two subparagraphs below or revise to suit Project.
2. Stake trees of 2- through 5-inch caliper. Use stake of required length to penetrate at least 18 inches below bottom of backfilled excavation. Set stake to avoid penetrating root balls or root masses.
3. Support trees with strap-bar or tree straps. Allow enough slack to avoid rigid restraint of tree.

### 3.6 ROOT-BARRIER INSTALLATION

- A. Install root barrier where indicated on drawings.
- B. Align root barrier vertically and run it continuously linearly along and adjacent to the paving or other hardscape elements.
  1. Position top of root barrier flush with finish grade.
  2. Slide panels together to connect.
  3. Do not distort or bend root barrier during construction activities.
  4. Do not install root barrier surrounding the root ball of tree.

### 3.7 MULCHING

- A. Mulch all planting areas (except turf) to depth of 3".
  1. Do not place mulch within 3 inches of trunks or stems.

### 3.8 EDGING INSTALLATION

- A. Metal Edging: Install metal edging where indicated according to manufacturer's written instructions. Anchor with steel stakes spaced approximately 30 inches apart, driven below top elevation of edging.

### 3.9 HERBICIDE APPLICATION

- A. Apply herbicide and other chemical products and biological control agents in accordance with authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

- B. Pre-Emergent Herbicides (Selective and Non-Selective): Apply to tree, shrub, and ground-cover areas in accordance with manufacturer's written recommendations. Do not apply to seeded areas.
- C. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.

### 3.10 TURF AREA PREPARATION

- A. Limit turf subgrade preparation to areas to be planted.
- B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 6 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
  - 1. Spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil.
    - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
    - b. Mix lime with dry soil before mixing fertilizer.
  - 2. Spread planting soil to a depth of 6 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
    - a. Spread approximately 1/2 the thickness of planting soil over loosened subgrade. Mix thoroughly into top 4 inches of subgrade. Spread remainder of planting soil.
    - b. Reduce elevation of planting soil to allow for soil thickness of sod (1 1/2" below finish grade).
- C. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted within 24 hours.
  - 1. Sodded areas shall be compacted with a water filled roller. Final compaction shall range from 95% for flat areas and up to 90% for 3:1 slopes.
- D. Moisten prepared area before planting if soil is dry. Water thoroughly to a depth of 4" and allow surface to dry before planting. Do not create muddy soil.
- E. Before planting, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

### 3.11 PREPARATION FOR EROSION-CONTROL MATERIALS

- A. Prepare area as specified in "Turf Area Preparation".

### 3.12 TURF

- A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application. Maximum permissible time of mix of fertilizer and seed shall be 1- hour in order to prevent deterioration of seed.
1. Mix slurry with manufacturer's recommended tackifier.
  2. Apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than 1500-lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate.
  3. Apply slurry uniformly to all areas to be seeded in a two-step process. Apply first slurry coat at a rate so that mulch component is deposited at not less than 500-lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate. Apply slurry cover coat of fiber mulch (hydromulching) at a rate of 1000 lb/acre.
- B. Sodding:
1. Lay sod within 24 hours of harvesting.
  2. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips to offset joints in adjacent courses. Avoid damage to subgrade or sod during installation. Tamp and roll with 200 pound roller to ensure contact with subgrade, eliminate air pockets, and form a smooth surface.
    - a. Lay sod across angle of slopes exceeding 1:3.
    - b. Anchor sod on slopes exceeding 1:6 with wood pegs spaced as recommended by sod manufacturer but not less than 2 anchors per sod strip to prevent slippage.
    - c. At irregular areas, sod shall be laid in the direction of the longest straight line that can be drawn through the area.
  3. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 6 inches below sod.
- C. Remove turf from around each tree to create a 3'-0" diameter.

### 3.13 SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by Landscape Architect:
1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.
  2. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.

- B. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

### 3.14 MAINTENANCE

- A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.
- B. Thoroughly water to insure vigorous and healthy growth until work is accepted. Water in a manner to prevent erosion due to application of excessive quantities of water.
- C. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.
- D. Weeding
  - 1. Keep plant basins and areas between plants free of weeds. Control weeds with pre-emergent herbicides. If weeds develop, use legally approved herbicides. Avoid frequent soil cultivation that destroys shallow roots. Weeding also shall be included in all paved areas including public or private sidewalks.
  - 2. Apply a final application of pre-emergent herbicide at the end of the Maintenance Period, just prior to final acceptance.
- E. Pruning
  - 1. Trees: Prune trees to select and develop permanent scaffold branches; to eliminate narrow V-shaped branch forks that lack strength; to reduce toppling and wind damage by thinning out crowns; to maintain a natural appearance and to balance crown with roots. All trees shall be maintained and pruned in accordance with the accepted practices of the International Society of Arboriculture (ISA). Prune only as directed by the Landscape Architect.
  - 2. Shrubs: Same objectives as for trees. Shrubs shall not be clipped into balled or boxed forms unless such is required by the landscape plans. All pruning cuts shall be made to lateral branches, buds or flush with the trunk. Stubbing and heading shall not be permitted.
  - 3. Only skilled 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 costs to the owner.
- F. Staking: Stakes shall remain in place through the guarantee period and shall be inspected and adjusted to prevent rubbing that causes bark wounds. Remove nursery stakes from all trees just prior to end of Maintenance Period, unless otherwise noted.
- G. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices

whenever possible to minimize the use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

- H. Fertilization: Fertilize all planting areas, just prior to end of maintenance period with slow release maintenance fertilizer at manufacturer's recommended rate.
- I. Turf Maintenance
  - 1. Native Sod/Water quality swales
    - a. Do not mow. String line trimmer shall be used for trimming or edge clean-up. Turf must be well established and free of bare spots and weeds to the satisfaction of the Landscape Architect prior to final acceptance.
    - b. Excess clippings shall be picked up and removed from the site and premises.
    - c. Edges shall be trimmed as needed for neat appearance. Do not use lawn edger. Clippings shall be removed from paved and planting areas and disposed of from the site.
    - d. Fertilization: Spring or fall application of Native Sod maintenance fertilizer at manufacturer's recommended rate.
  - 2. Watering: Lawns shall be watered at such frequency as weather conditions require to replenish soil moisture below root zone and to establish healthy strands of grass.
  - 3. Disease control: Control turf diseases throughout the maintenance period with legally approved fungicides and herbicides.
  - 4. Weed Control
    - a. Control broad leaf weeds with selective, legally approved herbicides throughout maintenance period.
    - b. A final application of selective herbicide shall be applied at the end of the landscape maintenance period, just prior to final acceptance.
- J. IRRIGATION SYSTEM
  - 1. System Observation: The Contractor shall check all systems for proper operation. Lateral lines shall be flushed out after removing the last sprinkler head or two at each end of the lateral. All heads are to be adjusted as necessary for unimpeded head to head coverage.
  - 2. Controllers: Set and program automatic controllers for seasonal water requirements. Give the Owner's Representative instructions on how to turn off system in case of emergency.
  - 3. Repairs: Repair all damages to irrigation system at the Contractor's expense. Repairs shall be made within twenty-four (24) hours.

### 3.15 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris from paved and vertical surfaces. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Erect temporary fencing, barricades and/or warning signs as required protecting newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established. Treat, repair, or replace damaged plantings.
- C. Remove non-degradable erosion-control measures after grass establishment period.
- D. During planting, keep adjacent paving and construction clean and work area in an orderly condition.
- E. Trash: Remove trash weekly in all planted areas, pedestrian walkways and parking areas.

### 3.16 FINAL ACCEPTANCE

- A. Work under this section will be accepted by the Landscape Architect upon satisfactory completion of all work (including maintenance). Upon final acceptance, and written notification, the Owner will assume responsibility for maintenance of the work.

END OF SECTION



**SECTION 32 91 14**  
**BIORETENTION SOIL**

**PART 1 - GENERAL**

**1.1 SECTION INCLUDES**

- A. Specifications for furnishing, placing, and compacting bioretention soils as indicated.
- B. Related Sections:
  - 1. Division 31 – Earthwork
  - 2. Section 32 80 00 – Irrigation
  - 3. Section 32 91 13 – Soil Preparation and Finish Grading
  - 4. Section 32 92 00 – Lawns and Grasses
  - 5. Section 32 93 00 – Trees, Shrubs, Ornamental Grasses and Ground Covers
  - 6. Section 32 94 00 – Planting Accessories
  - 7. Section 32 97 00 – Landscape Maintenance
  - 8. Section 33 40 50 – Landscape Drainage

**1.2 REFERENCES**

- A. American Society for Testing and Materials (ASTM):
  - ASTM D422 – Standard Test Method for Particle-Size Analysis of Soils
  - ASTM D1557 – Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort
  - ASTM D2434 – Standard Test Method for Permeability of Granular Soils (Constant Head)
  - ASTM D5268 – Standard Specification for Topsoil Used for Landscaping Purposes

**1.3 GENERAL REQUIREMENTS**

- A. Bioretention soil shall achieve a long-term, in-place infiltration rate of at least 5 inches per hour. Bioretention soil shall also support vigorous plant growth.

Bioretention Soil shall be a mixture of topsoil or fine sand, and compost, measured on a volume basis.

Mix A – Topsoil Blend  
10%-20% Topsoil  
50%-60% Fine Sand  
30%-40% Compost

Mix B – Fine Sand Blend  
60%-70% Fine Sand  
30%-40% Compost

#### 1.4 SUBMITTALS

The contractor must submit to the University for approval:

- A. A sample of mixed bioretention soil.
- B. Certification from the soil supplier or an accredited laboratory that the Bioretention Soil meets the requirements of this guideline specification.
- C. Grain size analysis results of the fine sand component performed in accordance with ASTM D 422, Standard Test Method for Particle Size Analysis of Soils.
- D. Quality analysis results for compost performed in accordance with Seal of Testing Assurance (STA) standards, as specified in Section 1.4.
- E. Organic content test results of mixed Bioretention Soil. Organic content test shall be performed in accordance with by Testing Methods for the Examination of Compost and Composting (TMECC) 05.07A, "Loss-On-Ignition Organic Matter Method".
- F. A description of the equipment and methods used to mix the sand and compost to produce Bioretention Soil.
- G. Provide the following information about the testing laboratory(ies) name of laboratory(ies) including:
  - 1. Contact person(s)
  - 2. Address(es)
  - 3. Phone contact(s)
  - 4. E-mail address(es)
  - 5. Qualifications of laboratory(ies), and personnel including date of current certification by STA, ASTM, or approved equal

#### PART 2 - PRODUCTS

##### 2.1 SAND FOR BIORETENTION SOIL

- A. General.
  - 1. Sand shall be free of wood, waste, coating such as clay, stone dust, carbonate, etc., or any other deleterious material. All aggregate passing the No. 200 sieve size shall be non-plastic.
- B. Sand for Bioretention Soil Texture.
  - 1. Sand for Bioretention Soils shall be analyzed by an accredited lab using #200, #100, #40, #30, #16, #8, #4, and 3/8 inch sieves (ASTM D 422 or as approved by University), and meet the following gradation:

Sieve Size	Percentage Passing (by weight)	
	<i>Min</i>	<i>Max</i>

3/8 Inch	100	100	
No. 4		90	100
No. 8		70	100
No. 16		40	95
No. 30		15	70
No. 40		5	55
No. 100	0		15
No. 200	0		5

Note all sands complying with ASTM C33 for fine aggregate comply with the above gradation requirements.

## 2.2 TOPSOIL FOR BIORETENTION SOIL

### A. General

Topsoil shall be free of wood, waste, or any other deleterious material.

### B. Topsoil for Bioretention Soil Texture

The overall topsoil texture shall be loamy sand as analyzed by an accredited laboratory. The overall dry weight percentages shall be 60-90% sand, with less than 20% passing than the #200 sieve and less than 5% clay of the total weight with no gravel.

## 2.3 COMPOSTED MATERIAL

Compost shall be a well decomposed, stable, weed free organic matter source meeting the standards developed by the US Composting Council (USCC). The product shall be certified through the USCC Seal of Testing Assurance (STA) Program (a compost testing and information disclosure program).

### A. Compost Quality Analysis Before delivery of the soil, the Contractor shall submit a copy of lab analysis performed by a laboratory that is enrolled in the US Composting Council's Compost Analysis Proficiency (CAP) program and using approved Test Methods for the Evaluation of Composting and Compost (TMECC). The lab report shall verify:

1. Feedstock Materials shall be specified and include one or more of the following: landscape/yard trimmings, grass clippings, food scraps, and agricultural crop residues.
2. Organic Matter Content: 35% - 75% by dry wt.
3. Carbon and Nitrogen Ratio: C:N < 25:1.
4. Maturity/Stability: shall have a dark brown color and a soil-like odor. Compost exhibiting a sour or putrid smell, containing recognizable grass or leaves, or is hot (120F) upon delivery or rewetting is not acceptable. In addition, any one of the following is required to indicate stability:
  - a. Oxygen Test < 1.3 O<sub>2</sub> /unit TS /hr
  - b. Specific oxy. Test < 1.5 O<sub>2</sub> / unit BVS
  - c. Respiration test < 8 C / unit VS / day
  - d. Dewar test < 20 Temp. rise (°C)
  - e. Solvita® > 5 Index value

5. Toxicity: any one of the following measures is sufficient to indicate non-toxicity.
    - a. NH<sub>4</sub>- : NO<sub>3</sub>-N < 3
    - b. Ammonium < 500 ppm, dry basis
    - c. Seed Germination > 80 % of control
    - d. Plant Trials > 80% of control
    - e. Solvita® > 5 Index value
  6. Nutrient Content: provide analysis detailing nutrient content including N-P-K, Ca, Na, Mg, S, and B.
    - a. Total Nitrogen content 0.9% or above preferred.
    - b. Boron: Total shall be <80 ppm; Soluble shall be <2.5 ppm
  7. Salinity: Must be reported; < 6.0 mmhos/cm
  8. pH shall be between 6.5 and 8. May vary with plant species.
- B. Particle size: 95% passing a 1/2" screen
  - C. Bulk density: shall be between 500 and 1100 dry lbs/cubic yard
  - D. Moisture Content shall be between 30% - 55% of dry solids
  - E. Inerts: compost shall be relatively free of inert ingredients, including glass, plastic and paper, < 1 % by weight or volume
  - F. Weed seed/pathogen destruction: provide proof of process to further reduce pathogens (PFRP). For example, turned windrows must reach min. 55C for 15 days with at least 5 turnings during that period.
  - G. Select Pathogens: Salmonella <3 MPN/4grams of TS, or Coliform Bacteria <10000 MPN/gram
  - H. Trace Contaminants Metals (Lead, Mercury, Etc.) Product must meet US EPA, 40 CFR 503 regulations
  - I. Compost Testing. The Contractor will test all compost products within 120 calendar days prior to application. Samples will be taken using the STA sample collection protocol. (The sample collection protocol can be obtained from the U.S. Composting Council, 4250 Veterans Memorial Highway, Suite 275, Holbrook, NY 11741 Phone: 631-737-4931, [www.compostingcouncil.org](http://www.compostingcouncil.org)). The sample shall be sent to an independent STA Program approved lab. The Contractor will pay for the test.

### **PART 3 - EXECUTION**

#### **3.01 PLACEMENT AND COMPACTION OF BIORETENTION SOILS**

Place the bioretention soil in 8" to 12" lifts. Lifts are not to be compacted but are placed to reduce the possibility of excessive settlement. Allow time for natural compaction and settlement prior to planting. Bioretention soil may be watered to encourage compaction.

END OF SECTION

## SECTION 33 30 00

### SITE SANITARY SEWERAGE SYSTEM

#### PART 1 - GENERAL

##### 1.1 SECTION INCLUDES

- A. Specifications for furnishing, installing, testing the site sanitary sewerage system in the ground and to a point outside the building wall as indicated.

##### 1.2 RELATED SECTIONS

- A. Section 31 23 33 - Trenching and Backfilling

##### 1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM)
  - ASTM D1784 Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
  - ASTM D1785 Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Schedules 40, 80, and 120
  - ASTM D2564 Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping System
  - ASTM D3139 Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
  - ASTM F477 Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
- B. American Water Works Association (AWWA)
  - AWWA C900 Polyvinyl Chloride (PVC) Pressure Pipe, four inch through 12 inch for Water Distribution
- C. Sanitary Utility District Standards

Note that all work shall be performed and completed in accordance with the jurisdictional sanitary utility district's standard drawings and specifications. The Contractor shall be responsible for obtaining all such standards as applicable.

##### 1.4 SUBMITTALS

- A. Shop Drawings showing piping layouts, sizes, types, and cleanouts.
- B. Respective manufacturer's product data for manufactured materials and equipment.

- C. Equipment manufacturer's printed operating and maintenance instructions consisting of detailed parts list, recommended spare parts list, and complete operation and maintenance procedures.
- D. Certified test reports of equipment, as applicable.

## **1.5 SITE CONDITIONS**

- A. Excavations shall be dry immediately before and after products are installed. Provide surfaces and structures to, and on, which sewerage products will be installed.
- B. Coordinate the installation of the sewerage system with the jurisdictional sanitary district or utility District.

## **PART 2 - PRODUCTS**

### **2.1 BURIED PIPE AND FITTINGS**

- A. Requirements

Provide the types, sizes, and configurations of pipe, fittings, and miscellaneous materials and installation accessories as indicated and required.

- B. PVC Pipe and Fittings, Three Inches and Smaller

1. Pipe: Polyvinyl chloride (PVC), ASTM D1785, Schedule 80, Type 1, Grade 1.
2. Fittings: ASTM D1784, socket weld, same material and schedule as pipe.
3. Joints: Socket welded with PVC solvent cement conforming to ASTM D564.

- C. PVC Pipe and Fittings, Four Inches and Larger

Pipe: ASTM D3034 (SDR 26), polyvinyl chloride (PVC) water pipe with bell and spigot ends and flexible ring joints.

### **2.2 CLEANOUTS**

- A. At grade, cleanouts shall have adjustable sleeve-type housing, threaded brass plug with countersunk slot, and cast iron frame and cover.

## **PART 3 - EXECUTION**

### **3.1 PREPARATION**

- A. Excavations shall be free of water and extraneous material immediately before sanitary sewerage products are installed or placed. Bottoms of trenches shall have a six inch sand bed and shall be formed to support the bottom quadrant of the pipe and fittings. Should rock be encountered or should bedding material be unsuitable to support the products at design elevation, continue excavation to an elevation eight inches below the design elevation and backfill with clean sand.
- B. Interior of pipe, pipe fittings, valves, drains, and cleanouts shall be cleaned of foreign substances before installation.

### **3.2 INSTALLATION**

- A. Install products where indicated. Remove and reinstall products that are disturbed after installation. Ends of products to which future connections will be made shall be either valved, plugged, or capped, and anchored.
- B. Connections to existing facilities shall be made with fittings and short bends to suit the actual conditions; connect products in accordance with the product manufacture's installation instructions.
- C. Pipe and fittings shall be set to line and grade as shown on the Construction Drawings.

### **3.3 INSTALLING PIPE**

- A. Protect pipe and fittings during handling to prevent damage.
- B. Place, shape, and compact bedding material to receive barrel of pipe.
- C. Start laying pipe at lowest point; lay true to line and grade indicated.
- D. Install pipe to bear on bedding material along entire length.
- E. Do not place the pipe on blocking material of any type.
- F. Do not use wedges while installing the pipe.
- G. Install pipe so that bells and grooves are on upstream end.
- H. Align each section of pipe with adjoining section with uniform annular space between bell and spigot and so as to prevent sudden offsets in flow line.
- I. As each section of pipe is laid, place sufficient bedding and backfill to hold it firmly in place.
- J. Apply lubricant to rubber gasket (o-rings) immediately before joining pipe sections.
- K. Keep interior of sewer clean as work progresses. Where small pipe sizes make cleaning difficult, keep suitable swab or drag in pipe and pull through each joint immediately after joining is completed.
- L. Keep trenches and excavations free of water during construction and until backfilled.
- M. When work is not in progress, securely plug ends of pipe and fittings to prevent extraneous matter from entering pipes and fittings.
- N. Cut pipe ends which project into a sewer structure flush with the inside face of the structure and cover exposed pipe reinforcement with grout.
- O. Where length of stub is not shown, install four foot length and seal free end with brick masonry bulkhead or approved stopper.

- P. Obtain Engineer's approval before covering pipe.
- Q. Where indicated, place additional bedding material around and over the pipe in lifts not exceeding six inches loose. Compact each lift before placement of next lift.
- R. Accomplish compaction by methods which will avoid damage to pipe and which will not disturb its alignment and grade. The use of vibratory rollers is prohibited until compacted cover over pipe has reached three feet or half diameter, whichever is greater.
- S. Connect sanitary sewerage system to existing public sanitary sewers in accordance with requirements of the jurisdictional authority.

### **3.4 PIPE CLEANOUTS**

- A. Cleanouts shall be the same size as the pipe up to and including four inches, and shall be four inches minimum for pipe sizes six inches and larger. Cleanouts for drainage pipe shall consist of a long sweep 1/4 bend or one or two 1/8 bends extended to the place indicated. Wall or accessible piping cleanouts shall be T-pattern, 90 degree branch drainage fittings having screw plugs. Cleanouts shall be provided at the base of each riser and shall consist of a wye pattern fitting with a screw plug.

### **3.3 TESTS**

#### **A. Testing Requirements**

1. Conduct a mandrel test to ensure that the line is free of obstructions subsequent to the placing of intermediate backfill material over the line.
2. Upon completion of the test and determination that the line is free of obstructions, plug, cap or otherwise close the open end or ends of the installed piping to prevent the entrance of debris into the lines.
3. Supply all tools, equipment, and water necessary to make all tests.
4. Flush all sewer lines prior to testing and accumulated materials shall be removed at each manhole and no materials shall be allowed to enter the existing sewer system.
5. The Contractor shall be responsible for making all necessary arrangements with the jurisdictional sanitary utility District for performing and witnessing the required tests.

#### **B. Sanitary Sewer Pipeline Tests**

1. Perform air test on all installed sanitary sewer pipes upon completion of backfill.
2. Perform vacuum test on all manholes.
3. Hydrostatically test all installed sanitary sewer force mains.
4. Test all sewers 24" or less in diameter with low pressure.
5. Sewers with a diameter greater than 24 inches may be tested by visual inspection.



C. Low Pressure Air Test (Gravity Pipe)

1. Clean set sections of pipe to be tested before starting air test.
2. Plug pipe outlets with pneumatic plugs capable of resisting internal testing pressures without requiring external bracing.
3. Immediately following pipe cleaning and wetting, slowly supply air to plugged pipe until internal air pressure reaches 5 psi. Allow at least two minutes for temperature to stabilize before proceeding, except slowly add air to maintain a minimum of 4.5 psig but less than 5 psig pressure. While temperature is stabilizing, spray plugs, pipes, and hoses with soap solution and eliminate air leaks.
4. After temperature has stabilized, measure time required (10 minute min.) for pressure to drop of 1 psig so that the pressure at the end of the test is at least 3.5 psig. If measured time exceeds allowable time, pipe will not be accepted.
5. Time, in seconds, for pressure to drop from 4.5 to 3.5 psig shall be not less than the following; time for intermediate lengths shall be interpolated:

Length	Pipe Diameter, Inches						
Pipe (Ft)	8	10	12	15	18	21	24
25	18	28	40	62	89	121	158
50	35	55	79	126	178	243	317
75	53	83	119	186	267	364	475
100	70	110	158	248	356	485	634
125	83	138	198	309	444	595	680
150	110	165	238	375	510	595	680
175	123	193	277	425	510	595	680
200	141	220	317	425	510	595	680
225	158	248	340	425	510	595	680
250	176	275	340	425	510	595	680
275	194	283	340	425	510	595	680
300	211	283	340	425	510	595	680
350	227	283	340	425	510	595	680
400	227	283	340	425	510	595	680

D. Vacuum Test (Manholes)

1. Clean set manholes to be tested before starting vacuum test.

2. Plug manhole outlets with pneumatic plugs capable of resisting internal testing pressures without requiring external bracing.
3. Vacuum test head shall be positioned at the top of the casing including grade rings.
4. Test shall be 10 lbs for 60 seconds. Measure time required for pressure to drop to 9 lbs. If measured time exceeds allowable time, manhole will not be accepted.
5. Manholes showing greater than the allowable leakage shall be repaired and retested until a satisfactory leakage result is obtained.
6. Time, in seconds, for pressure to drop from 10 lbs to 9 lbs shall be not less than the following; time for intermediate lengths shall be interpolated:

Depth	Diameter		
	48"	54"	60"
<10'	20	23	26
10'	25	29	33
12'	30	35	39
14'	35	41	46

D. Hydrostatic Tests (Force Mains)

1. Force main testing shall be done after intermediate backfill has been placed and compacted but before final paving has been placed.
2. Repair any leaks which may develop resulting from or caused by the tests.
3. Fill lines with water and increase pressure to a 120% of the Total Dynamic Head of the system or fifty (50) psi whichever is greater.
4. Test shall be applied for not less than two (2) hours with zero leakage.
5. Use of air to test force mains is not permitted.

E. Visual Test Method

1. Slowly pull a television camera through sewer and inspect for visual leaks and cracks in pipe. Repair leaks, then re-inspect pipe. Submit tape of entire length of system to District for approval.

F. Joint Pressure Testing

1. Insert sealing packer with joint testing capability, into sewer line.
2. Place sealing packer around joint and pressure test joint. If a drop in air pressure occurs reseal the joint.
3. Repeat procedure for each joint.

G. Criteria for Acceptance

1. The section of sewer being tested will not be accepted if test results exceed allowable leakage to take less time than minimum holding time. If pipe proves to be unacceptable, immediately repair defective materials and workmanship. The Contractor will not be permitted to change to another test if original test method reveals system has failed.

END OF SECTION

**SECTION 33 40 00**  
**SITE DRAINAGE SYSTEM**

**PART 1 - GENERAL**

**1.1 SECTION INCLUDES**

- A. Specifications for site and subdrainage and area runoff collection system and connection to existing storm drainage system as indicated.

**1.2 RELATED SECTIONS**

- A. Section 31 23 33 - Trenching and Backfilling
- B. Section 33 05 00 - Utility Structures

**1.3 REFERENCES**

- A. American Society of State Highway and Transportation Officials (AASHTO)
  - AASHTO M252M Specification for Corrugated Polyethylene Pipe
  - AASHTO M294M Specification for Corrugated Polyethylene Pipe, 300 1200 mm
- B. American Society for Testing and Materials (ASTM)
  - ASTM F667 Standard Specification for Large Diameter Corrugated Polyethylene Pipe and Fittings
  - ASTM F405 Standard Specification for Corrugated Polyethylene Pipe and Fittings
  - ASTM C76 Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
- C. Marin County Uniform Construction Standards - May 2008
- D. Caltrans Standard Specifications - Latest Edition

## 1.4 SUBMITTALS

### A. Shop Drawings

Detailed drawings that indicate site drainage in plan and section, including relationship to other systems, interfaces, and drainage structures, connections, alignment, grade, bedding and backfill, and other pertinent data.

### B. Product Data

Submit manufacturer's product data for pipe and pipe connection materials.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

#### A. Pipe Connection Requirements

Ends of pipe shall be bell and spigot, except PVC Perp., to assure continuous alignment of pipe and leakproof joints.

#### B. Concrete Pipe (RCP)

Reinforced Pipe: ASTM C76, Class III; for pipe 15 inches in diameter and larger. "O" ring rubber gasket (ASTM C443)

#### C. High Density Polyethylene Pipe (HDPE)

Pipe: HDPE pipe conforming to ASTM D3212, or ASTM 1417 for pipe sizes 8 inch - 60 inch (ADS N-12 1B WT pipe or equivalent)

#### D. PVC Pipe (PVC)

Pipe: PVC Pipe shall conform to ASTM D-3034, SDR 26, Bell and Spigot rubber joints for pipe sizes 4" through 8".

#### E. PVC Perforated Pipe (PVC Perp)

Pipe: PVC Perforated Pipe shall conform to ASTM D-3034, SDR 26, solvent weld joints for pipe sizes 4", 6" and 8". Perforations shall be 2 rows of 1/2" holes on 5" centers, 120° apart.

## PART 3 - EXECUTION

### 3.1 INSTALLATION OF PIPE

#### A. Laying Pipe

1. Lay pipe to line and grade indicated. Bell and spigot type, lay bells in cross-cuts cut in trench. Lay pipe with the bell or grooved end uphill.
2. Prevent dirt from getting into pipe joints.

3. Remove pipe which is cracked, checked, spalled, or damaged from the work.
  4. Clean interior of pipe of cement, dirt, and extraneous matter as the work progresses.
- B. Pipe Joints
1. Pipe joints shall be made secure and watertight.
  2. Employ appropriate equipment to draw the sections of the pipe tightly together.
- C. Visual Test Method
1. Slowly pull a television camera through storm drain and inspect for visual leaks, separated joints and cracks in pipe and manholes. Repair leaks and joints. Replace cracked pipe. Re-inspect pipe. Submit tape of entire length of system to District for approval.
- D. Backfilling
1. Piping shall not be covered with backfill material, until inspected, and approved by the Engineer.
  2. After making up pipe joints, fill space between pipe and sides of trench with backfill material half-way up the pipe. Both sides shall be filled for full width of trench at same time and carefully compacted so as to hold the pipe in its proper position.
  3. After pipe has been installed, inspected, and approved, place and compact backfill as specified in Section 31 23 33 - Trenching and Backfilling.

END OF SECTION



**ABBREVIATIONS & CHARACTER SYMBOLS**

#	POUND OR NUMBER	JAN.	JANITOR
(E)	EXISTING	JT.	JOINT
(N)	NEW	L.F.	LINEAL FOOT
@	ANGLE	LAM.	LAMINATE
Ø	DIAMETER OR ROUND	LAV.	LAVATORY
⊕	CENTERLINE	LCKR	LOCKER
⊖	PROPERTY LINE	LT.	LIGHT
A.C.	ASPHALT CONCRETE	M.H.	MANHOLE
A.C.P.	ALUMINUM COMPOSITE PANEL	M.O.	MASONRY OPENING
A.D.	AREA DRAIN	MAX.	MAXIMUM
A.F.F.	ABOVE FINISH FLOOR	MECH.	MECHANICAL
A.L.S.	ASSISTED LISTENING SYSTEM	MED.	MEDIUM
ACOUS.	ACOUSTICAL	MEMB.	MEMBRANE
ADJ.	ADJUSTABLE OR ADJACENT	MFR.	MANUFACTURER
AGGR.	AGGREGATE	MIN.	MINIMUM
ALUM.	ALUMINUM	MIR.	MIRROR
APPROX.	APPROXIMATELY	MISC.	MISCELLANEOUS
ARCH.	ARCHITECTURAL	MTD.	MOUNTED
ASB.	ASBESTOS	MTL.	METAL
ASPH.	ASPHALT	MUL.	MULLION
B.D.	BOARD	N.	NORTH
BITUM.	BITUMINOUS	N.I.C.	NOT IN CONTRACT
BLDG.	BUILDING	N.R.	NON RATED
BLK.	BLOCK	N.T.S.	NOT TO SCALE
BLKG.	BLOCKING	NO.	NUMBER
BM.	BEAM	NOM.	NOMINAL
BOTT.	BOTTOM	O.A.	OVERALL
C.B.	CATCH BASIN	O.C.	ON CENTER
C.B.C.	CALIFORNIA BUILDING CODE	O.D.	OUTSIDE DIAMETER
C.G.	CORNER GUARD	O.F.C.I.	OWNER FURNISHED CONTRACTOR INSTALLED
C.I.	CAST IRON	O.F.D.	OVERFLOW DRAIN
C.I.P.	CAST IN PLACE	O.F.O.I.	OWNER FURNISHED OWNER INSTALLED
C.J.	CONTROL JOINT	O.H.	OPPOSITE HAND
C.L.	CENTERLINE	O.S.B.	ORIENTED STRAND BOARD
C.O.	CASED OPENING	OJ.	OVER
C.W.	CURTAIN WALL	OBS.	OBSOLETE
CAB.	CABINET	OCC.	OCCUPANTS OR OCCUPANCY
CEM.	CEMENT	OFC.	OFFICE
CER.	CERAMIC	OPNG.	OPENING
CLG.	CEILING	OPP.	OPPOSITE
CLKG.	CAULKING	P.L.	PROPERTY LINE
CLD.	CLOSED	PLAM.	PLASTIC LAMINATE
CLR.	CLEAR	P.T.D.	PAPER TOWEL DISPENSER
CNTR.	COUNTER	P.T.D.R.	PAPER TOWEL DISPENSER/RECEPTACLE
COL.	COLUMN	P.T.D.F.	PRESSURE TREATED DOUG FIR
COMP.	COMPOSITE	PL.	PLATE
CONC.	CONCRETE	PLAS.	PLASTER
CONN.	CONNECTION	PLYWD.	PLYWOOD
CONSTR.	CONSTRUCTION	PNTD.	PAINTED
CONT.	CONTINUOUS	PR.	PAIR
CORR.	CORRIDOR	PRCST.	PRECAST
CTR.	CENTER	R.C.	RESILIENT CHANNEL
CTSK.	COUNTERSUNK	R.D.	ROOF DRAIN
D.F.	DRINKING FOUNTAIN	R.O.	ROUGH OPENING
D.G.	DECOMPOSED GRANITE	R.R.	RESTROOM
D.O.	DOOR OPENING	R.W.L.	RAIN WATER LEADER
D.S.	DOWNSPOUT	RAD.	RADIUS
D.S.P.	DRY STANDPIPE	REC.	RECESSED
DBL.	DOUBLE	REF.	REFERENCE
DEMO.	DEMOLISH	REFR.	REFRIGERATOR
DEPT.	DEPARTMENT	REINF.	REINFORCED
DET.	DETAIL	REQ.	REQUIRED
DIA.	DIAMETER	RESIL.	RESILIENT
DIM.	DIMENSION	REGIS.	REGISTER
DISP.	DISPENSER	RISER	RISER
DN.	DOWN	RM.	ROOM
DR.	DOOR	RWD.	REDWOOD
DTL.	DETAIL	S.	SOUTH
DWG.	DRAWING	S.A.M.	SELF-ADHERED MEMBRANE
DWR.	DRAWER	S.C.	SOLID CORE
E.	EAST	S.C.D.	SEAT COVER DISPENSER
E.J.	EXPANSION JOINT	S.D.	SOAP DISPENSER
E.O.S.	EDGE OF SLAB	S.F.	SQUARE FOOT
E.P.	ELEC. PANEL	S.M.S.	SHEET METAL SCREW
E.W.C.	ELEC. WATER COOLER	S.N.D.	SANITARY NAPKIN DISPENSER
EA.	EACH	S.N.R.	SANITARY NAPKIN RECEPTACLE
EL.	ELEVATION	S.O.G.	SLAB ON GRADE
ELEC.	ELECTRICAL	S.S.	STAINLESS STEEL
ELEV.	ELEVATOR	SCHED.	SCHEDULE
EMER.	EMERGENCY	SECT.	SECTION
ENCL.	ENCLOSURE	SEP.	SEPARATE OR SEPARATION
EQ.	EQUAL	SHT.	SHEET
EQUIP.	EQUIPMENT	SHTG.	SHEETING
EXP.	EXPANSION	SHWR.	SHOWER
EXPO.	EXPOSED	SIM.	SIMILAR
EXT.	EXISTING	SPEC.	SPECIFICATION
EXT.	EXTERIOR	SQ.	SQUARE
F.A.	FIRE ALARM	ST.	STATION
F.B.	FLAT BAR	STD.	STANDARD
F.D.	FLOOR DRAIN	STL.	STEEL
F.E.	FIRE EXTINGUISHER	STOR.	STORAGE
F.E.C.	FIRE EXTINGUISHER CABINET	STR.	STRUCTURAL
F.F.	FINISH FLOOR	SUSP.	SUSPENDED
F.H.C.	FIRE HOSE CABINET	SYM.	SYMMETRICAL
F.O.C.	FACE OF CONCRETE	T&G.	TONGUE AND GROOVE
F.O.F.	FACE OF FINISH	T.	TEMPERED GLASS
F.O.M.	FACE OF MASONRY	T.B.	TOWEL BAR
F.O.S.	FACE OF STUD	T.O.C.	TOP OF CONCRETE
F.S.	FIRE SPRINKLER	T.O.P.	TOP OF PARAPET
FDN.	FOUNDATION	T.O.STL.	TOP OF STEEL
FIN.	FINISH	T.O.W.	TOP OF WALL
FL.	FLOOR	T.P.	TOP OF PAVEMENT
FLASH.	FLASHING	T.P.D.	TOILET PAPER DISPENSER
FLUOR.	FLUORESCENT	TEL.	TELEPHONE
FRF.	FIREPROOF	TER.	TERRAZZO
FRMG.	FRAMING	THK.	THICK
FT.	FOOT OR FEET	TRANS.	TRANSITION
FTG.	FOOTING	TRD.	TREAD
FURR.	FURRING	TYP.	TYPICAL
FUT.	FUTURE	U.O.N.	UNLESS OTHERWISE NOTED
G.B.	GRAB BAR	UNF.	UNFINISHED
G.S.M.	GALVANIZED SHEET METAL	UR.	URINAL
GA.	GAUGE	UTL.	UTILITY
GALV.	GALVANIZED	V.I.F.	VERIFY IN FIELD
GL.	GLASS	VER.	VERIFY
GND.	GROUND	VERT.	VERTICAL
GR.	GRADE	VEST.	VESTIBULE
GYP.	GYPSONUM	W.	WEST
H.B.	HOSE BIB	W.C.	WATER CLOSET
H.C.	HOLLOW CORE	W.O.	WHERE OCCURS
H.M.	HOLLOW METAL	W.P.	WATERPROOF
HDWD.	HARDWOOD	W.V.	WOOD VENEER
HDWR.	HARDWARE	W/O.	WITHOUT
HORIZ.	HORIZONTAL	WD.	WOOD
HR.	HOUR	WSCT.	WAINSCOT
HT.	HEIGHT	WT.	WEIGHT
I.D.	INSIDE DIAMETER		
I.S.A.	INTERNATIONAL SYMBOL OF ACCESSIBILITY		
INSUL.	INSULATION		
INT.	INTERIOR		

**DRAFTING & MATERIAL SYMBOLS**

	FLOW LINE		EARTH
	NEW CONTOUR		POROUS FILL
	EXISTING CONTOUR		CONCRETE
	CENTER LINE		CAST STONE
	PROPERTY LINE		CONCRETE BLOCK
	PROJECTED LINE		BRICK
	HIDDEN LINE		METAL
	BREAK LINE		CONTINUOUS WOOD
	MATCH LINE		SHIM OR NON-CONT. WOOD BLOCKING
	CONTRACT LIMIT LINE		FINISH WOOD
	ELEVATION MARK OR DATUM POINT		PLYWOOD
	WALL TYPE		GYPSONUM WALLBOARD
	REVISION MARK		STONE
	GRID LINES		RIGID INSULATION
	NUMBERS VERTICAL		BATT INSULATION
	LETTERS HORIZONTAL		ACOUSTIC TILE
	NORTH ARROW		PLASTER ON METAL LATH
	LAUNDRY ROOM NAME AND NUMBER		PAVING
	DOOR NUMBER		TILE
	WINDOW TYPE		GLASS
	EQUIPMENT TYPE		EXPANSION MATERIAL
	KEYNOTE		SEALANT W/ BACK-UP MATERIAL
	SECTION (BUILDING)		CARPET
	SECTION IDENTIFICATION		INTERIOR ELEVATION
	SHEET WHERE SECTION IS DRAWN		ELEVATION IDENTIFICATION
	PARTIAL SECTION		SHEET WHERE ELEVATION IS DRAWN
	SECTION IDENTIFICATION		VIEW SHOWN
	DETAIL		ALIGN FINISH SURFACES
	DETAIL IDENTIFICATION		
	SHEET WHERE DETAIL IS DRAWN		

**GENERAL NOTES**

- CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS ON SITE PRIOR TO STARTING CONSTRUCTION. SHOULD A DISCREPANCY APPEAR IN THE SPECIFICATIONS OR DRAWINGS, OR IN THE WORK DONE BY OTHERS FROM THE CONTRACT DOCUMENTS THAT AFFECT ANY WORK, NOTIFY THE ARCHITECT AT ONCE FOR INSTRUCTION ON HOW TO PROCEED. IF THE CONTRACTOR PROCEEDS WITH THE WORK AFFECTED WITHOUT INSTRUCTIONS FROM THE ARCHITECT, THE CONTRACTOR SHALL MAKE GOOD ANY RESULTING DAMAGE OR DEFECT TO THE SATISFACTION OF THE ARCHITECT. SHOULD A CONFLICT OCCUR IN OR BETWEEN DRAWINGS AND SPECIFICATIONS, OR WHERE DETAIL REFERENCES ON CONTRACT DRAWINGS HAVE BEEN OMITTED, THE CONTRACTOR IS DEEMED TO HAVE ESTIMATED THE MOST EXPENSIVE MATERIALS AND CONSTRUCTION METHOD INVOLVED, UNLESS A WRITTEN DECISION FROM THE ARCHITECT HAS BEEN OBTAINED WHICH DESCRIBES AN ALTERNATE METHOD AND/OR MATERIALS.
- THE CONTRACTOR SHALL CONFINE HIS OPERATIONS ON THE SITE TO AREAS PERMITTED BY THE OWNER. THE WORK SHALL BE DONE IN ACCORDANCE WITH APPLICABLE LAWS, LOCAL ORDINANCES, PERMITS AND THE CONTRACT DOCUMENTS. THE JOB SITE SHALL BE MAINTAINED IN A CLEAN, ORDERLY CONDITION FREE OF DEBRIS AND LITTER, AND SHALL NOT BE UNREASONABLY ENCUMBERED WITH ANY MATERIALS OR EQUIPMENT. EACH SUB-CONTRACTOR IMMEDIATELY UPON COMPLETION OF EACH PHASE OF HIS/HER WORK SHALL REMOVE ALL TRASH AND DEBRIS AS A RESULT OF HIS OPERATION.
- CONTRACTOR SHALL NOTIFY THE ARCHITECT WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS OR DRAWINGS. CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE BUILDING THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED WITH THE AFFECTED PARTIES.
- DIMENSIONING RULES:
  - NOTED DIMENSIONS SHALL AT ALL TIMES TAKE PRECEDENCE OVER SCALED DIMENSIONS
  - ALL DIMENSIONS OF NEW WORK ARE TO THE FACE OF STUD U.O.N.
  - ALL DIMENSIONS OF EXISTING WORK ARE TO FACE OF FINISH U.O.N.
  - CEILING HEIGHT DIMENSIONS ARE FROM TOP OF FLOOR SLAB TO FINISH FACE OF CEILING.
  - DIMENSIONS NOTED "CLEAR" OR "CLR" MUST BE PRECISELY MAINTAINED.
  - DIMENSIONS ARE NOT ADJUSTABLE WITHOUT APPROVAL OF THE ARCHITECT.
  - VERTICAL DIMENSIONS ARE FROM THE TOP OF THE FLOOR SLAB DATUM LINE, ESTABLISHED BY THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE OWNER OR ARCHITECT, UNLESS OTHERWISE NOTED.
  - DIMENSIONS MARKED "A.F.F." ARE ABOVE FINISHED FLOOR MATERIALS. IN CARPETED AREAS, THE TOP OF SLAB IS CONSIDERED TO BE THE FINISHED FLOOR.
  - DIMENSIONS MARKED "V.I.F." SHALL BE "VERIFIED" IN THE FIELD BY THE CONTRACTOR.
  - ALL DIMENSIONS ARE TO STRUCTURAL COMPONENTS UNLESS OTHERWISE NOTED.
  - DIMENSIONS LOCATING DOORS ARE TO THE INSIDE EDGE OF JAMB, U.N.O.
- SHOULD ANY CONDITIONS DEVELOP NOT COVERED BY THE CONTRACT DOCUMENTS, OR IF A CHANGE IN THE SCOPE OF WORK IS PROPOSED, A CHANGE ORDER DETAILING AND SPECIFYING THE REQUIRED CHANGE(S) SHALL BE SUBMITTED TO AND APPROVED BY DSA-ACCESS BEFORE PROCEEDING WITH THE WORK.

**DRAWING INDEX**

**SHEETS**

A0.00	INDEX SHEET
A0.01	CALGREEN CHECKLIST (DSA)
A0.02	CALGREEN CHECKLIST (DSA)
A0.10	OVERALL CAMPUS PLAN
A0.30	SITE ACCESSIBILITY PLAN
A0.31	ACCESSIBILITY DETAILS
C2.0	GRADING PLAN
C3.0	UTILITY PLAN
C4.0	CIVIL DETAILS
A1.00	SITE PLAN
A1.11	SITE DETAILS
E0.01	SYMBOLS LIST, DRAWING INDEX & DETAILS
E1.00	ELECTRICAL SITE PLAN
L1.00	LANDSCAPE PLAN
L1.11	LANDSCAPE DETAILS
L2.00	IRRIGATION PLAN
L2.11	IRRIGATION DETAILS

**PROJECT DESCRIPTION**

PARKING LOT IMPROVEMENTS FOR ADJACENT FARM AND POOL. THE PROJECT ADDS A WATER QUALITY SWALE, PARKING LOT SHADE TREES, AND AN ADA ACCESSIBILITY WALK AND STAIRS TO FARM. IMPROVEMENTS INCREASE PARKING COUNT WITHOUT INCREASING PAVED AREAS.

**PROJECT INFORMATION**

PROJECT NAME: ORGANIC FARM PARKING LOT IMPROVEMENTS  
COLLEGE OF MARIN, INDIAN VALLEY CAMPUS

PROJECT LOCATION: 1800 IGNACIO BLVD. NOVATO, CA 94949

**APPLICABLE CODES**

2016	CALIFORNIA BUILDING CODE (CBC)
2016	ADA
2016	CALIFORNIA PLUMBING CODE (CPC)
2016	CALIFORNIA ELECTRICAL CODE (CEC)

**CONTACT INFORMATION**

**OWNER**  
COLLEGE OF MARIN  
CONTACT: GREG NELSON  
PH: 415-884-3101

**LANDSCAPE ARCHITECT**  
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2484 NATOMAS PARK DR., SUITE 100  
SACRAMENTO, CA 95833  
PH: (916) 443-0335  
FAX: (916) 441-2823

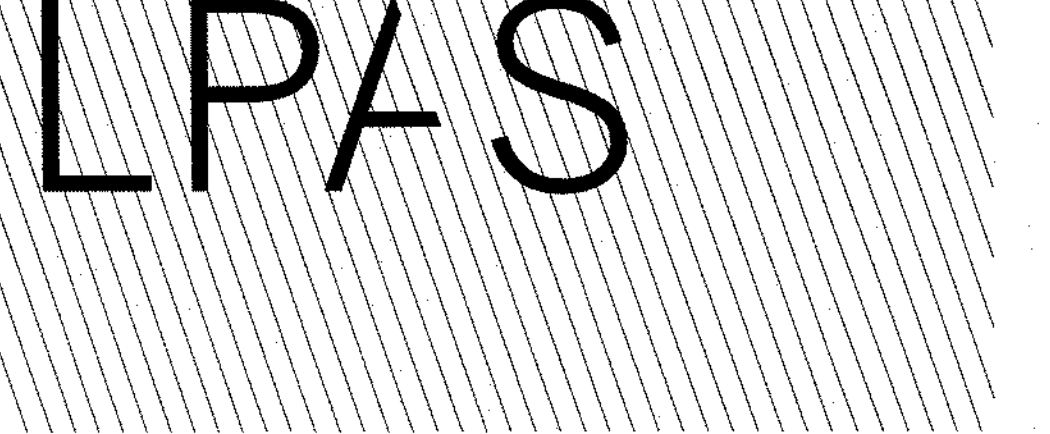
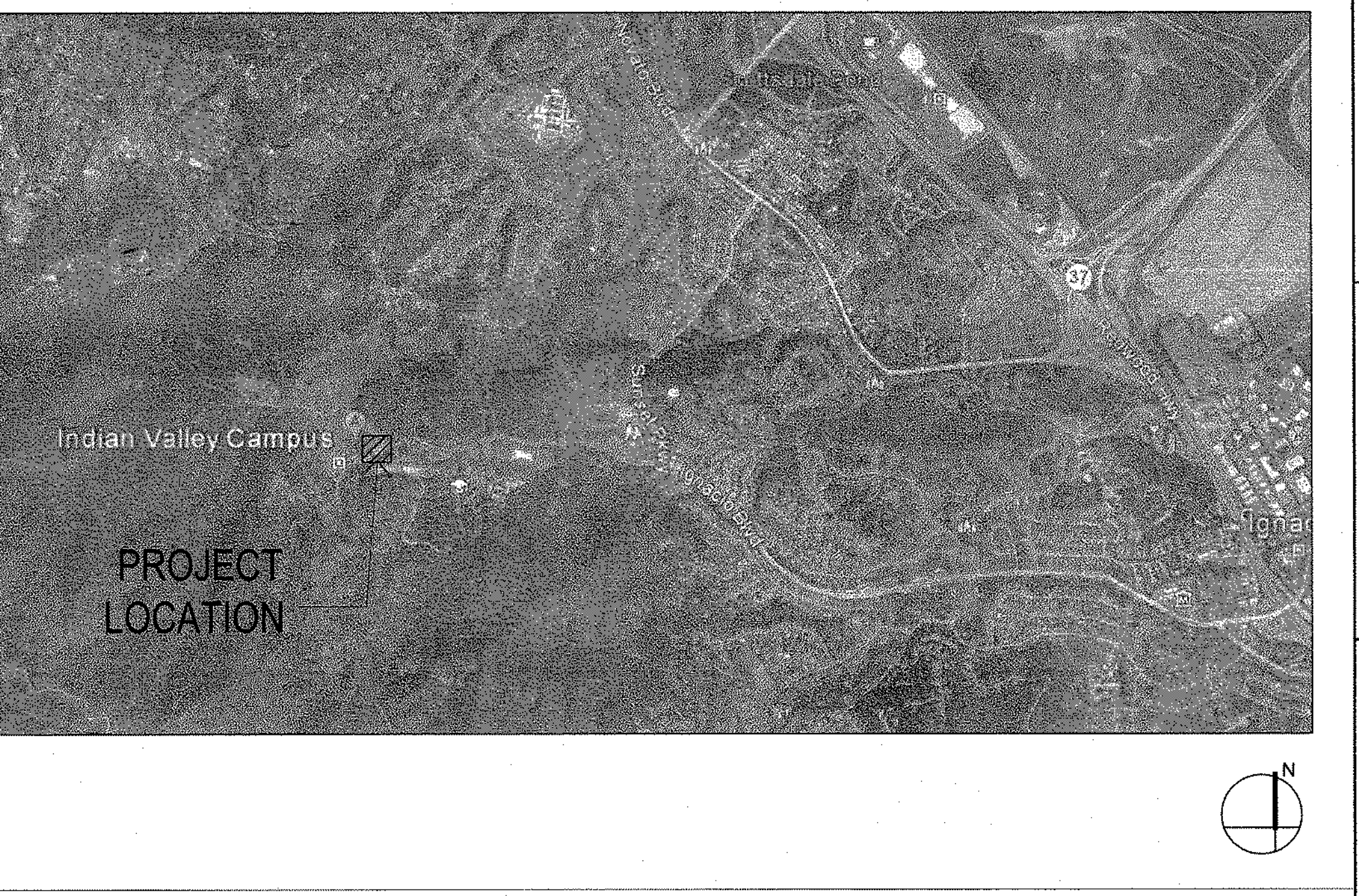
**PROJECT TEAM**

**OWNER**  
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CONTACT: GREG NELSON  
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THE ENGINEERING ENTERPRISE  
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PH: (530) 886-8556

**CIVIL ENGINEER**  
CSW  
45 Leveoni Court  
Novato, CA 94949  
PH: (415)-883-9850

**PROJECT LOCATION**



2484 Natomas Park Drive Suite 100 Sacramento CA 95833  
916 443 0335 lpasdesign.com Architecture + Design

**COLLEGE OF MARIN  
INDIAN VALLEY CAMPUS**

**ORGANIC FARM  
PARKING LOT IMPROVEMENTS**

MARIN, CA

**PROJECT INFORMATION**

PROJECT NAME: ORGANIC FARM PARKING LOT IMPROVEMENTS  
COLLEGE OF MARIN, INDIAN VALLEY CAMPUS

PROJECT LOCATION: 1800 IGNACIO BLVD. NOVATO, CA 94949

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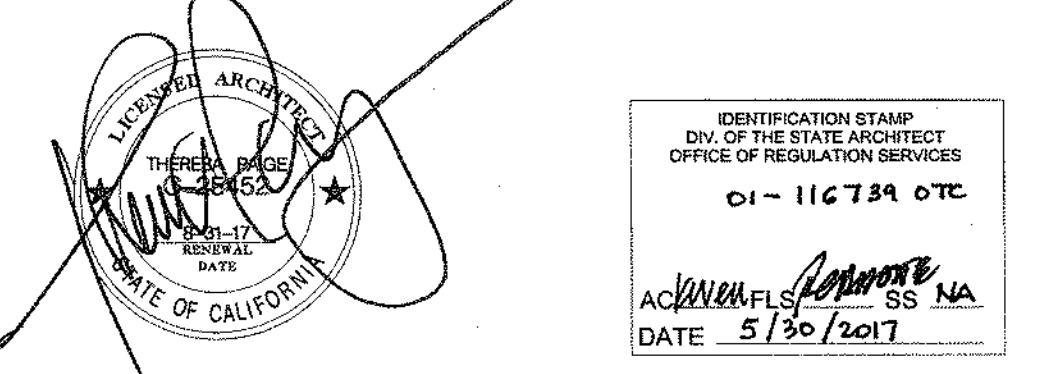
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ARCHITECT'S STAMP APPROVAL

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CONSULTANT

**INDEX SHEET**

PROJECT NO: 1102-0005  
DATE: 05.30.17

SHEET NO:

**A0.00**



## COLLEGE OF MARIN INDIAN VALLEY CAMPUS

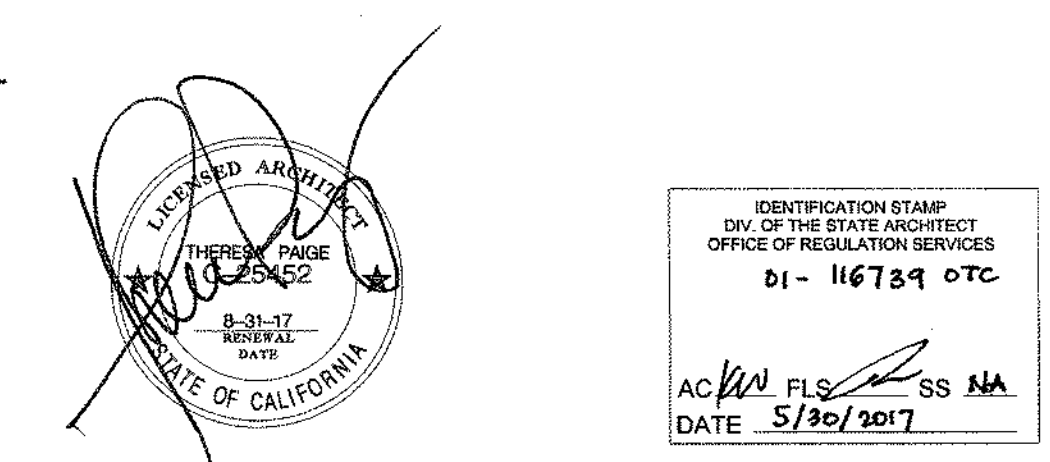
ORGANIC FARM  
PARKING LOT IMPROVEMENTS  
MARIN, CA

## CALGREEN CHECKLIST (DSA)

PROJECT NO: 1102-0005  
DATE: 05.30.17

SHEET NO:

# A0.01



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CONSULTANT

DSA PROJECT SUBMITTAL GUIDELINE-4  
CALGREEN CODE

**Attachment 1**  
**2016 CALIFORNIA GREEN BUILDING STANDARDS CODE**  
Division of the State Architect – Structural Safety (DSA-SS)  
(CCR, Title 24, Part 11)

APPLICATION MATRIX	Mandatory Chapter 5
<b>DIVISION 5.1 - PLANNING AND DESIGN</b> <b>SITE DEVELOPMENT</b>	
<b>5.106.4.2 Bicycle parking.</b> For public schools and community colleges comply with Sections 5.106.4.2.1 and 5.106.4.2.2.	
<b>5.106.4.2.1 Student bicycle parking.</b> Provide permanently anchored bicycle racks conveniently accessed with a minimum of four two-bike capacity racks per new building.	
<b>5.106.4.2.2 Staff bicycle parking.</b> Provide permanent secure bicycle parking conveniently accessed with a minimum of two staff bicycle parking spaces per new building. Acceptable parking facilities shall be convenient from the street or staff parking area and shall meet one of the following: 1. Covered, lockable enclosures with permanently anchored racks for bicycles; 2. Lockable bicycle rooms with permanently anchored racks; or 3. Lockable, permanently anchored bicycle lockers.	
<b>5.106.8 Light pollution reduction [N].</b> Outdoor lighting systems shall be designed and installed to comply with the following: 1. The minimum requirements in the California Energy Code for Lighting Zones 1-4 as defined in Chapter 10 of the California Administrative Code; and 2. Backlight, Uplight and Glare (BUG) ratings as defined in IESNA TM-15-11; and 3. Allowable BUG ratings not exceeding those shown in Table 5.106.8, or Comply with a local ordinance lawfully enacted pursuant to Section 101.7, whichever is more stringent. <b>Exceptions: [N]</b> 1. Luminaires that qualify as exceptions in Section 140.7 of the California Energy Code. 2. Emergency lighting. 3. Building facade meeting the requirements in Table 140.7-B of the California Energy Code, Part 6. 4. Custom lighting features as allowed by the local enforcing agency, as permitted by Section 101.8 Alternate materials, designs and methods of construction.	

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DSA PROJECT SUBMITTAL GUIDELINE-4  
CALGREEN CODE

APPLICATION MATRIX	Mandatory Chapter 5
<b>5.303.3.3 Showersheads</b> <b>5.303.3.3.1 Single showerhead.</b> Showerheads shall have a maximum flow rate of not more than 2.0 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specifications for showerheads. <b>5.303.3.3.2 Multiple showerheads serving one shower.</b> When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 gallons per minute at 80 psi, or the showerhead shall be designed to allow only one shower outlet to be in operation at one time. <b>Note:</b> A hand-held shower shall be considered a showerhead. <b>5.303.3.4 Faucets and fountains.</b> <b>5.303.3.4.1 Non-residential lavatory faucets.</b> Non-residential lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi. <b>5.303.3.4.2 Kitchen faucets.</b> Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi. <b>5.303.3.4.3 Wash fountains.</b> Wash fountains shall have a maximum flow rate of not more than 1.8 gallons per minute/200mm square (inches) at 60 psi. <b>5.303.3.4.4 Metering faucets.</b> Metering faucets shall not deliver more than 0.20 gallons per cycle. <b>5.303.3.4.5 Metering faucets for wash fountains.</b> Metering faucets for wash fountains shall have a maximum flow rate of not more than 0.20 gallons per cycle/200mm square (inches) at 60 psi. <b>Note:</b> Where complying faucets are unavailable, aerators or other means may be used to achieve reduction. <b>5.303.6 Standards for plumbing fixtures and fittings.</b> Plumbing fixtures and fittings shall be installed in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table 1701.1 of the California Plumbing Code and in Chapter 6 of this code.	

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DSA PROJECT SUBMITTAL GUIDELINE-4  
CALGREEN CODE

APPLICATION MATRIX	Mandatory Chapter 5
<b>Note: [N]</b> See also California Building Code, Chapter 12, Section 1205.6 for college campus lighting requirements for parking facilities and walkways. <b>Table 5.106.8</b>	
<b>5.106.10 Grading and paving.</b> Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water includes, but are not limited to, the following: 1. Swales. 2. Water collection and disposal systems. 3. French drains. 4. Water retention gardens. 5. Other water measures which keep surface water away from buildings and aid in groundwater recharge. <b>Exception:</b> Additions and alterations not altering the drainage path.	
<b>DIVISION 5.2 - ENERGY EFFICIENCY</b> <b>GENERAL</b>	
<b>5.201.1 California Energy Code.</b> For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards. New construction, additions, and alterations must comply with the California Energy Code. Refer to California Energy Code Table 100.0-A	
<b>DIVISION 5.3 - WATER EFFICIENCY AND CONSERVATION</b> <b>INDOOR WATER USE</b>	
<b>5.303.3 Water conserving plumbing fixtures and fittings.</b> Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following: <b>5.303.3.1 Water closets.</b> The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specifications for Tank-Type Toilets. <b>Note:</b> The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush. <b>5.303.3.2 Urinals.</b> <b>5.303.3.2.1 Wall mounted urinals.</b> The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. <b>5.303.3.2.2 Floor mounted urinals.</b> The effective flush volume of floor mounted or other urinals shall not exceed 0.5 gallons per flush.	

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DSA PROJECT SUBMITTAL GUIDELINE-4  
CALGREEN CODE

APPLICATION MATRIX	Mandatory Chapter 5
<b>5.504.6 Resilient flooring systems.</b> For 80 percent of floor area receiving resilient flooring, installed resilient flooring shall meet at least one of the following: 1. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program; 2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010; 3. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and EQ 7.1 (formerly EQ 2.2) dated July 2012 and listed in the CHPS High Performance Product Database; or 4. Products certified under the UL GREENGUARD Gold (formerly the Greenguard Children & Schools program).	
<b>5.504.5.3 Filters.</b> In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a Minimum Efficiency Reporting Value (MERV) of 8. MERV 8 filters shall be installed prior to occupancy and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual. <b>Exceptions:</b> 1. An ASHRAE 10-percent to 15-percent efficiency filter shall be permitted for an HVAC unit meeting the 2016 California Energy Code having 60,000 Btu/h or less capacity per fan coil. If the energy use of the air delivery system is 0.4 W/dm <sup>2</sup> or less at the design air flow. 2. Existing mechanical equipment. <b>5.504.5.3.1 Labeling.</b> Installed filters shall be clearly labeled by the manufacturer indicating the MERV rating.	
<b>INDOOR MOISTURE CONTROL</b>	
<b>5.505.1 Indoor moisture control.</b> Buildings shall meet or exceed the provisions of California Building Code, CCR, Title 24, Part 2, Sections 1203 (Ventilation) and Chapter 14 (Exterior Walls). For additional measures not applicable to low-rise residential occupancies, see Section 5.407.2 of this code.	
<b>INDOOR AIR QUALITY</b>	
<b>5.506.1 Outside air delivery.</b> For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 1201.1 (Requirements For Ventilation) of the 2016 California Energy Code, or the applicable local code, whichever is more stringent, and Division 1, Chapter 4 of CCR, Title 8.	

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DSA PROJECT SUBMITTAL GUIDELINE-4  
CALGREEN CODE

APPLICATION MATRIX	Mandatory Chapter 5
<b>5.504.4.3 Paints and coatings.</b> Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Coatings Suggested Control Measure, as shown in Table 5.504.4.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 5.504.4.3, shall be determined by classifying the coating as a Flat, Nonflat, or Nonflat-High Gloss coating, based on its gloss, as defined in Subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat, or Nonflat-High Gloss VOC limit in Table 5.504.4.3 shall apply. <b>TABLE 5.504.4.3 - VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS</b> <b>5.504.4.3.1 Aerosol paints and coatings.</b> Aerosol paints and coatings shall meet the PVMIR limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c)(2) and (d)(2) of California Code of Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8 Rule 49. <b>5.504.4.4 Carpet systems.</b> All carpet installed in the building interior shall meet at least one of the following testing and product requirements: 1. Carpet and Rug Institute's Green Label Plus Program. 2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health Standard Method for the Testing and Evaluation Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.1, February 2010 (also known as CDPH Standard Method V1.1, or Specification 01350). 3. NSF/ANSI 140 at the Gold level or higher. 4. Scientific Certifications Systems Sustainable Choice; or 5. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and EQ 7.1 (formerly EQ 2.2) dated July 2012 and listed in the CHPS High Performance Product Database. <b>5.504.4.4.1 Carpet cushion.</b> All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program. <b>5.504.4.4.2 Carpet adhesive.</b> All carpet adhesive shall meet the requirements of Table 5.504.4.1. <b>5.504.4.5 Composite wood products.</b> Hardwood plywood, particleboard, and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure (ATCM) for Composite Wood (17 CCR 93120 et seq.). Those materials not exempted by the ATCM must meet the specified emission limits as shown in Table 5.504.4.5. <b>TABLE 5.504.4.5 - FORMALDEHYDE LIMITS</b>	

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DSA PROJECT SUBMITTAL GUIDELINE-4  
CALGREEN CODE

APPLICATION MATRIX	Mandatory Chapter 5
<b>BUILDING MAINTENANCE AND OPERATION</b>	
<b>5.410.1 Recycling by occupants.</b> Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive. <b>Exception:</b> Rural jurisdictions that meet and apply for the exemption of Public Resources Code 42649.82 (a)(2)(A) at seq. will also be exempt from the organic waste portion of this section. <b>5.410.1.2 Sample ordinance.</b> Space allocation for recycling areas shall comply with Chapter 16, Part 3, Division 30 of the Public Resources Code. Chapter 16 is known as the California Solid Waste Reuse and Recycling Access Act of 1991 (Act). <b>Note:</b> A sample ordinance for use by local agencies may be found in Appendix A of the document at the CalRecycle's website.	
<b>DIVISION 5.5 ENVIRONMENTAL QUALITY</b> <b>POLLUTANT CONTROL</b>	
<b>5.504.3 Covering of duct openings and protection of mechanical equipment during construction.</b> At the time of rough installation and during storage on the construction site until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of dust, water and debris which may enter the system.	
<b>5.504.4 Finish material pollutant control.</b> Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.6. <b>5.504.4.1 Adhesives, sealants, and caulks.</b> Adhesives, sealants, and caulks used on the project shall meet the requirements of the following standards: 1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or SCQMMD Rule 1168 VOC limits, as shown in Tables 5.504.4.1 and 5.504.4.2. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene), except for aerosol products as specified in Subsection 2, below. 2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section 94507. <b>TABLE 5.504.4.1 - ADHESIVE VOC LIMIT; TABLE 5.504.4.2 - SEALANT VOC LIMIT</b>	

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DSA PROJECT SUBMITTAL GUIDELINE-4  
CALGREEN CODE

APPLICATION MATRIX	Mandatory Chapter 5
<b>DIVISION 5.4 - MATERIAL CONSERVATION AND RESOURCE EFFICIENCY</b> <b>CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING</b>	
<b>5.408.1 Construction waste management.</b> Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste in accordance with Section 5.408.1.1, 5.408.1.2 or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent. <b>5.408.1.1 Construction waste management plan.</b> Where a local jurisdiction does not have a construction and demolition waste management ordinance that is more stringent, submit a construction waste management plan that: 1. Identifies the construction and demolition waste materials to be diverted from disposal by efficient use, recycling, reuse on the project or salvage for future use or sale. 2. Determines if construction and demolition waste materials will be sorted on-site (source-separated) or bulk mixed (single stream). 3. Identifies diversion facilities where construction and demolition waste material collected will be taken. 4. Specifies that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both. <b>5.408.1.2 Waste management company.</b> Utilize a waste management company that can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with this section. <b>Note:</b> The owner or contractor shall make the determination of the construction and demolition waste material will be diverted by a waste management company. <b>Exceptions to Sections 5.408.1.1 and 5.408.1.2:</b> 1. Excavated soil and land-clearing debris. 2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist. 3. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets. <b>5.408.1.3 Waste stream reduction alternative.</b> The combined weight of new construction disposal that does not exceed two pounds per square foot of building area may be deemed to meet the 65 percent minimum requirement as approved by the enforcing agency.	

GL-4 (rev Input New Date) DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA Page 6 of 11

DSA PROJECT SUBMITTAL GUIDELINE-4  
CALGREEN CODE

**Attachment 1**  
**2016 CALIFORNIA GREEN BUILDING STANDARDS CODE**  
Division of the State Architect – Structural Safety (DSA-SS)  
(CCR, Title 24, Part 11)

APPLICATION MATRIX	Mandatory Chapter 5
<b>DIVISION 5.1 - PLANNING AND DESIGN</b> <b>SITE DEVELOPMENT</b>	
<b>5.106.4.2 Bicycle parking.</b> For public schools and community colleges comply with Sections 5.106.4.2.1 and 5.106.4.2.2.	
<b>5.106.4.2.1 Student bicycle parking.</b> Provide permanently anchored bicycle racks conveniently accessed with a minimum of four two-bike capacity racks per new building.	
<b>5.106.4.2.2 Staff bicycle parking.</b> Provide permanent secure bicycle parking conveniently accessed with a minimum of two staff bicycle parking spaces per new building. Acceptable parking facilities shall be convenient from the street or staff parking area and shall meet one of the following: 1. Covered, lockable enclosures with permanently anchored racks for bicycles; 2. Lockable bicycle rooms with permanently anchored racks; or 3. Lockable, permanently anchored bicycle lockers.	
<b>5.106.8 Light pollution reduction [N].</b> Outdoor lighting systems shall be designed and installed to comply with the following: 1. The minimum requirements in the California Energy Code for Lighting Zones 1-4 as defined in Chapter 10 of the California Administrative Code; and 2. Backlight, Uplight and Glare (BUG) ratings as defined in IESNA TM-15-11; and 3. Allowable BUG ratings not exceeding those shown in Table 5.106.8, or Comply with a local ordinance lawfully enacted pursuant to Section 101.7, whichever is more stringent. <b>Exceptions: [N]</b> 1. Luminaires that qualify as exceptions in Section 140.7 of the California Energy Code. 2. Emergency lighting. 3. Building facade meeting the requirements in Table 140.7-B of the California Energy Code, Part 6. 4. Custom lighting features as allowed by the local enforcing agency, as permitted by Section 101.8 Alternate materials, designs and methods of construction.	

GL-4 (rev Input New Date) DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA Page 3 of 11

DSA PROJECT SUBMITTAL GUIDELINE-4  
CALGREEN CODE

APPLICATION MATRIX	Mandatory Chapter 5
<b>5.303.3.3 Showersheads</b> <b>5.303.3.3.1 Single showerhead.</b> Showerheads shall have a maximum flow rate of not more than 2.0 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specifications for showerheads. <b>5.303.3.3.2 Multiple showerheads serving one shower.</b> When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 gallons per minute at 80 psi, or the showerhead shall be designed to allow only one shower outlet to be in operation at one time. <b>Note:</b> A hand-held shower shall be considered a showerhead. <b>5.303.3.4 Faucets and fountains.</b> <b>5.303.3.4.1 Non-residential lavatory faucets.</b> Non-residential lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi. <b>5.303.3.4.2 Kitchen faucets.</b> Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi. <b>5.303.3.4.3 Wash fountains.</b> Wash fountains shall have a maximum flow rate of not more than 1.8 gallons per minute/200mm square (inches) at 60 psi. <b>5.303.3.4.4 Metering faucets.</b> Metering faucets shall not deliver more than 0.20 gallons per cycle. <b>5.303.3.4.5 Metering faucets for wash fountains.</b> Metering faucets for wash fountains shall have a maximum flow rate of not more than 0.20 gallons per cycle/200mm square (inches) at 60 psi. <b>Note:</b> Where complying faucets are unavailable, aerators or other means may be used to achieve reduction. <b>5.303.6 Standards for plumbing fixtures and fittings.</b> Plumbing fixtures and fittings shall be installed in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table 1701.1 of the California Plumbing Code and in Chapter 6 of this code.	

GL-4 (rev Input New Date) DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA Page 4 of 11

DSA PROJECT SUBMITTAL GUIDELINE-4  
CALGREEN CODE

APPLICATION MATRIX	Mandatory Chapter 5
<b>Note: [N]</b> See also California Building Code, Chapter 12, Section 1205.6 for college campus lighting requirements for parking facilities and walkways. <b>Table 5.106.8</b>	
<b>5.106.10 Grading and paving.</b> Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water includes, but are not limited to, the following: 1. Swales. 2. Water collection and disposal systems. 3. French drains. 4. Water retention gardens. 5. Other water measures which keep surface water away from buildings and aid in groundwater recharge. <b>Exception:</b> Additions and alterations not altering the drainage path.	
<b>DIVISION 5.2 - ENERGY EFFICIENCY</b> <b>GENERAL</b>	
<b>5.201.1 California Energy Code.</b> For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards. New construction, additions, and alterations must comply with the California Energy Code. Refer to California Energy Code Table 100.0-A	
<b>DIVISION 5.3 - WATER EFFICIENCY AND CONSERVATION</b> <b>INDOOR WATER USE</b>	
<b>5.303.3 Water conserving plumbing fixtures and fittings.</b> Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following: <b>5.303.3.1 Water closets.</b> The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specifications for Tank-Type Toilets. <b>Note:</b> The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush. <b>5.303.3.2 Urinals.</b> <b>5.303.3.2.1 Wall mounted urinals.</b> The effective flush volume of wall mounted urinals shall not exceed 0.125 gallons per flush. <b>5.303.3.2.2 Floor mounted urinals.</b> The effective flush volume of floor mounted or other urinals shall not exceed 0.5 gallons per flush.	

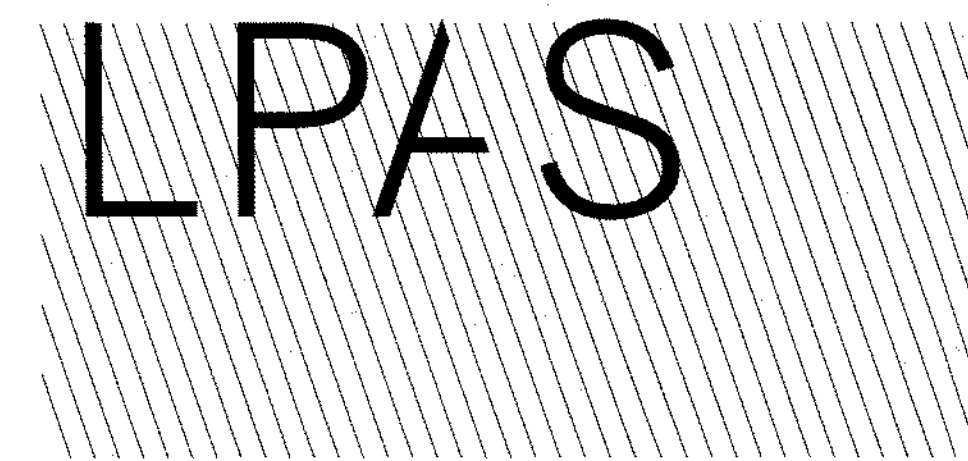
GL-4 (rev Input New Date) DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA Page 5 of 11

DSA PROJECT SUBMITTAL GUIDELINE-4  
CALGREEN CODE

APPLICATION MATRIX	Mandatory Chapter 5
<b>DIVISION 5.4 - MATERIAL CONSERVATION AND RESOURCE EFFICIENCY</b> <b>CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING</b>	
<b>5.408.1 Construction waste management.</b> Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste in accordance with Section 5.408.1.1, 5.408.1.2 or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent. <b>5.408.1.1 Construction waste management plan.</b> Where a local jurisdiction does not have a construction and demolition waste management ordinance that is more stringent, submit a construction waste management plan that: 1. Identifies the construction and demolition waste materials to be diverted from disposal by efficient use, recycling, reuse on the project or salvage for future use or sale. 2. Determines if construction and demolition waste materials will be sorted on-site (source-separated) or bulk mixed (single stream). 3. Identifies diversion facilities where construction and demolition waste material collected will be taken. 4. Specifies that the amount of construction and demolition waste materials diverted shall be calculated by weight or volume, but not by both. <b>5.408.1.2 Waste management company.</b> Utilize a waste management company that can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with this section. <b>Note:</b> The owner or contractor shall make the determination of the construction and demolition waste material will be diverted by a waste management company. <b>Exceptions to Sections 5.408.1.1 and 5.408.1.2:</b> 1. Excavated soil and land-clearing debris. 2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist. 3. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets. <b>5.408.1.3 Waste stream reduction alternative.</b> The combined weight of new construction disposal that does not exceed two pounds per square foot of building area may be deemed to meet the 65 percent minimum requirement as approved by the enforcing agency.	

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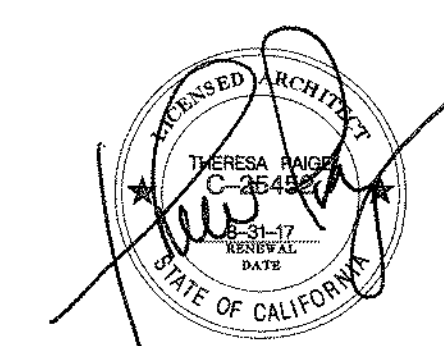


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# COLLEGE OF MARIN INDIAN VALLEY CAMPUS

ORGANIC FARM  
PARKING LOT IMPROVEMENTS

MARIN, CA



IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
OFFICE OF REGULATION SERVICES  
DL-116739-0TC  
AC/AN FLS/SS/NA  
DATE 5/30/2017

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CONSULTANT

## CALGREEN CHECKLIST (DSA)

PROJECT NO: 1102-0005  
DATE: 05.30.17

SHEET NO:

# A0.02

### DSA PROJECT SUBMITTAL GUIDELINE-4 CALGREEN CODE

APPLICATION MATRIX	Mandatory Chapter 5
<b>ENVIRONMENTAL COMFORT</b>	
<b>5.507.4 Acoustical control.</b> Employ building assemblies and components with Sound Transmission Class (STC) values determined in accordance with ASTM E 90 and ASTM E 413 or Outdoor-Indoor Sound Transmission Class (OITC) determined in accordance with ASTM E 1332, using either the prescriptive or performance method in Section 5.507.4.1 or 5.507.4.2. <b>Exception:</b> Buildings with few or no occupants or where occupants are not likely to be affected by exterior noise, as determined by the enforcement authority, such as factories, stadiums, storage, enclosed parking structures and utility buildings. <b>Exception: [DSA-SS]</b> For public schools and community colleges, the requirement of this section and all subsections apply only to new construction. <b>5.507.4.1 Exterior noise transmission prescriptive method.</b> Wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall meet a composite STC rating of at least 50 or a composite OITC rating of no less than 40, with exterior windows of a minimum STC of 40 or OITC of 30 in the following locations: 1. Within the 65 CNEL noise contour of an airport. <b>Exceptions:</b> 1. $L_{eq}$ or CNEL for military airports shall be determined by the facility Air Installation Compatible Land Use Zone (AICUZ) plan. 2. $L_{eq}$ or CNEL for other airports and heliports for which a land use plan has not been developed shall be determined by the local general plan noise element. 2. Within the 65 CNEL or $L_{eq}$ noise contour of a freeway or expressway, railroad, industrial source or fixed-guideway source as determined by the Noise Element of the General Plan. <b>5.507.4.1.1 Noise exposure where noise contours are not readily available.</b> Buildings exposed to a noise level of 65 $dBL_{eq}$ -1hr during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 or (OITC 30). <b>5.507.4.2 Performance method.</b> For buildings located as defined in Section 5.507.4.1 or 5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level ( $L_{eq}$ -1hr) of 50 dBA in occupied areas during any hour of operation. <b>5.507.4.2.1 Site features.</b> Exterior features such as sound wall or earth berms may be utilized as appropriate to the building, addition or alteration project to mitigate sound migration to the interior.	NA NA NA NA

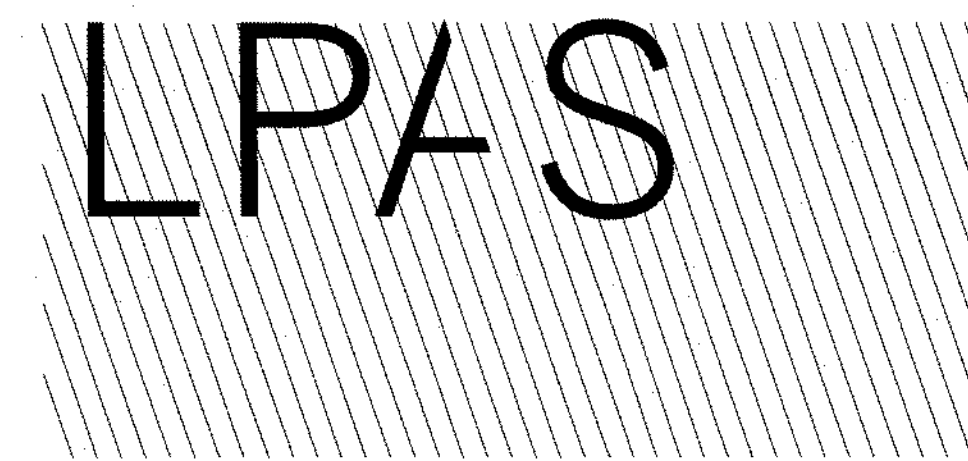
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DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA Page 10 of 11

### DSA PROJECT SUBMITTAL GUIDELINE-4 CALGREEN CODE

APPLICATION MATRIX	Mandatory Chapter 5
<b>5.507.4.3 Interior sound transmission.</b> Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40. <b>Note:</b> Examples of assemblies and their various STC rating may be found at the California Office of Noise Control website.	NA
<b>OUTDOOR AIR QUALITY</b>	
<b>5.508.1 Ozone depletion and greenhouse gas reductions.</b> Install HVAC and refrigeration and fire suppression equipment shall comply with 5.508.1.1 and 5.508.1.2. <b>5.508.1.1 Chlorofluorocarbons (CFCs)</b> Install HVAC, refrigeration and fire suppression equipment that do not contain CFCs. <b>5.508.1.2 Halons</b> Install HVAC, refrigeration and fire suppression equipment that do not contain Halons.	NA NA

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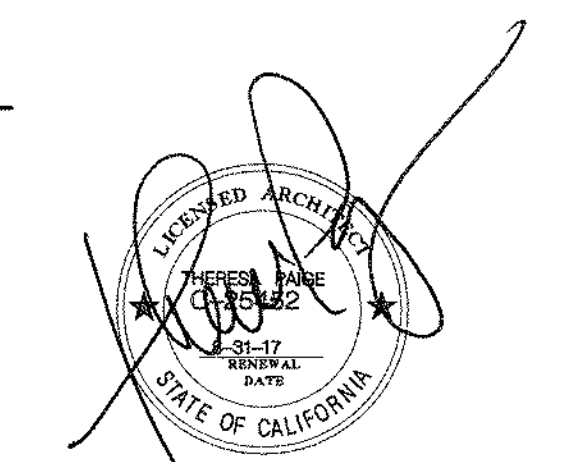
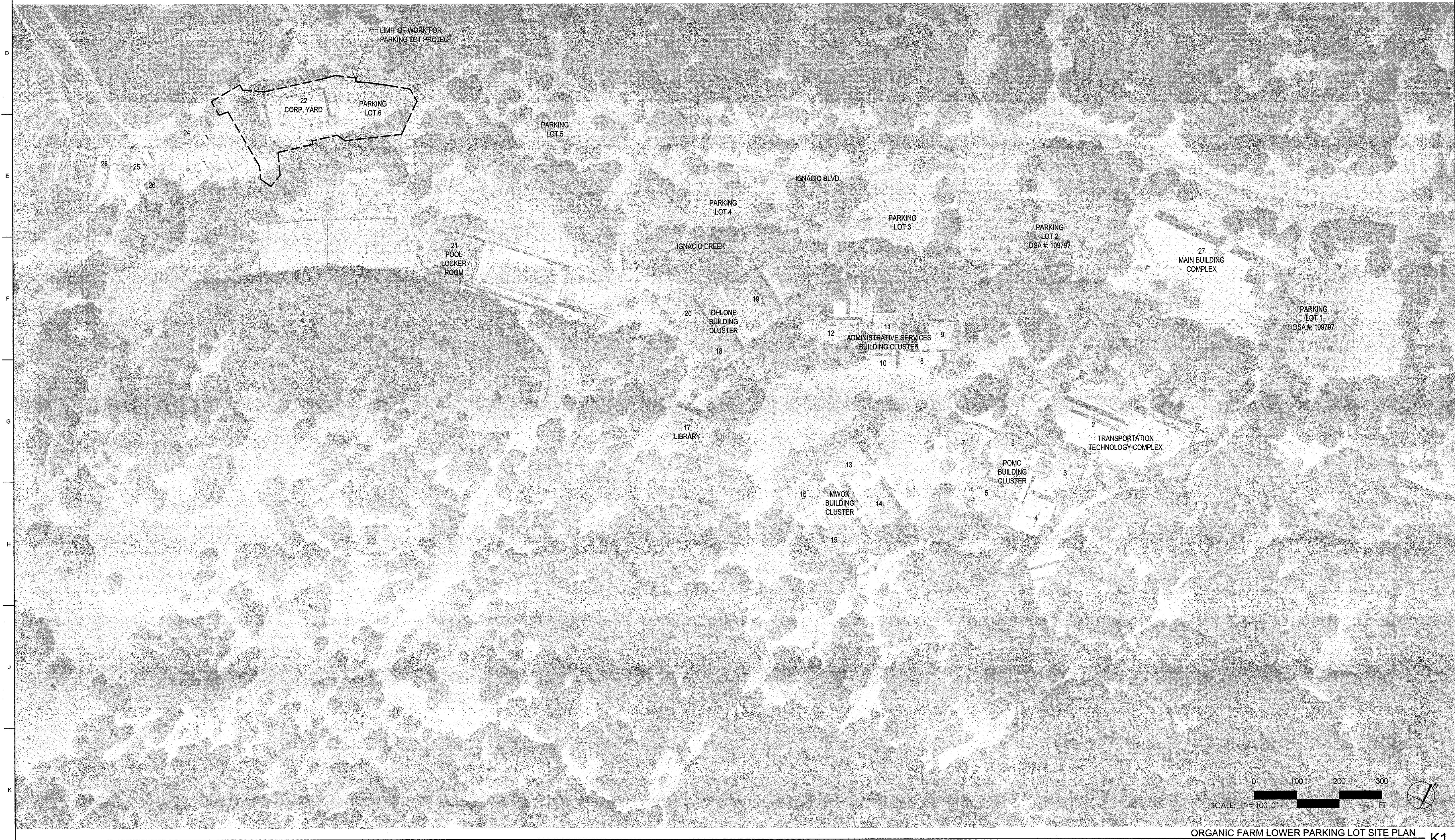
# COLLEGE OF MARIN INDIAN VALLEY CAMPUS

## ORGANIC FARM PARKING LOT IMPROVEMENTS

MARIN, CA

DATES	DESCRIPTION / OTHER	DSA/OSA NUMBER	BUILDING NUMBER	DESCRIPTION	DSA/OSA NUMBER
05/01/73	SITE 69 71013	35884	1	POMO 1-AUTO BODY	35898
05/01/73	PERIMETER ROAD	35884	2	POMO 2-AUTO TECHNOLOGY LAB	37169
05/01/73	BRIDGE #6	35884	3	CLASSRMS/LABORATORY/OFFICES	37169
06/29/73	ADMINISTRATION BUILDING (AS)	35993	4	MACHINE & METAL TECHNOLOGY	37169
06/29/73	BASKETBALL & VOLLEYBALL COURTS	35993	5	MATHEMATICS LABORATORY/ENDING	37169
06/29/73	COLLEGE A (OL)	35993	6	CLASSROOMS/OFFICES	35398
05/01/73	COLLEGE B (MW)	35993	7	CLASSROOMS/OFFICES	35398
06/29/73	POWERPLANT #1 PP1	35993	8	STUDENT SERVICES	35993
06/29/73	POWERPLANT #2 PP2	35993	9	ADMINISTRATIVE SERVICES	35993
06/29/73	POWERPLANT #3 PP3	35993	10	ASSOCIATED STUDENT BUILDING	35993
06/29/73	TENNIS COURTS (T1)	35993	11	INFORMATION SYSTEMS	35398
07/03/73	PHASE I 71014	35993	12	BOOKSTORE/CHILD CARE	35993
04/08/74	SITE 73 72101	35841	13	ART LABORATORY/GALLERY/CLASSRM	35993
11/08/74	PHASE II 72102	37169	14	CLASSROOMS/OFFICES	35993
08/23/76	PHASE III 75101-72103	35525	15	THEATER/LOUNGE	35993
08/24/76	IVC PHASE IV 74081 PM7, PM BLDG. 1, IS	35398	16	DIGITAL VILLAGE	35993
12/05/77	MAIN ENTRANCE GATES	75077	17	LIBRARY	37169
04/25/86	STRUCTURAL RENOVATION/REPAIR PH 1	47256	18	COMPUTER LABORATORY/CLASSRMS	35993
01/22/87	STRUCTURAL RENOVATION/REPAIR PH 2	48011	19	CLASSROOMS/LABORATORY/OFFICES	35993
06/24/87	STRUCTURAL RENOVATION/REPAIR PH 3	48987	20	FOOD SERVICE/CLASSRMS/MULTIMEDIA	35993
11/24/87	COGEN PLANT	49432	21	POOL/LOCKER ROOM	
06/24/89	EROSION CONTROL PH 1	51009	22	CORPORATION YARD	35993
09/22/94	AUTO LIFT INSTALLATION	61389	23		
07/02/95	IVC ATHLETIC FIELDS CITY OF NOVATO	64855	24	FARM AND GARDEN WAREHOUSE	
07/01/96	AUTO SHOP HEATING SYSTEM	65312	25	GREENHOUSE	
03/24/99	AUTO BODY SHOP HEATING SYSTEM	191371	26	SHADE STRUCTURE	
10/01/99	INFANT TODDLER CENTER	101253	27	CLASSROOMS/LIBRARY	109314
10/12/99	POOL SYSTEM MODERNIZATION	102000	28	ORGANIC FARM AND GARDEN	
02/14/02	ASPHALT UPGRADES	104299			

DSA/OSA TABULATION C1



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01-116734 etc  
AC 100 FLS 23 NA  
DATE 5/30/2017

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# OVERALL CAMPUS PLAN

PROJECT NO: 1102-0005  
DATE: 05.30.17

SHEET NO:

# A0.10

ORGANIC FARM LOWER PARKING LOT SITE PLAN 1"=20'-0" K1



LOCAL FIRE AUTHORITY REVIEW

To facilitate the Division of the State Architect's (DSA) approval of the Fire/Life Safety portion of a project, DSA requires Local Fire Authority (LFA) review of certain elements as identified in this form. Use of this form is mandatory for projects that add square footage to a campus or if any item on this form is relevant to the project. For additional information, see DSA 810 Instructions and DSA Policy 06-01.

**PROJECT INFORMATION**

School District/Owner: Marin Community College District  
 Project Name/School: College of Marin Indian Valley Campus Parking Lot P6  
 Project Address: 1800 Ignacio Blvd., Novato, CA 94949

**LOCAL FIRE AUTHORITY (LFA)**

LFA Agency Name: Marin Community College District  
 LFA Reviewer Name: Lyne Osborn Title: Director  
 Email: losborn@marincc.edu Telephone Number: 415-838-2603  
 I have reviewed and responded to the applicable items for this project as listed below.  
 Note: Only sign this form when it is stamped onto the site plan. A loose form is not acceptable to DSA.  
 LFA Reviewer's Signature: [Signature] Date: 5/19/17  
 Review Key: "Y" = Complies with LFA requirements "N" = Not approved (complete Section 8)  
 "NA" = Not applicable to the project "NR" = LFA elects not to review

Description	Y	N	NA	NR
1 Where an elevator does not meet medical emergency service cab size, per the California Building Code (CBC), use of stairways for emergency rescue and patient transport is acceptable.				X
2 Access roads, fire lane markings, pavers and gate entrances are in accordance with Title 19, California Code of Regulations and the California Fire Code, Chapter 5.	X			
3 Fire hydrant location and distribution complies with the California Fire Code (or see #4).				X
4 Fire hydrant location and distribution complies with NFPA 1142, "Alternate Means." If "NR" is checked, DSA can only approve on-site water storage as an alternate. The signature of the school district official is required to acknowledge the use of alternate means.				X

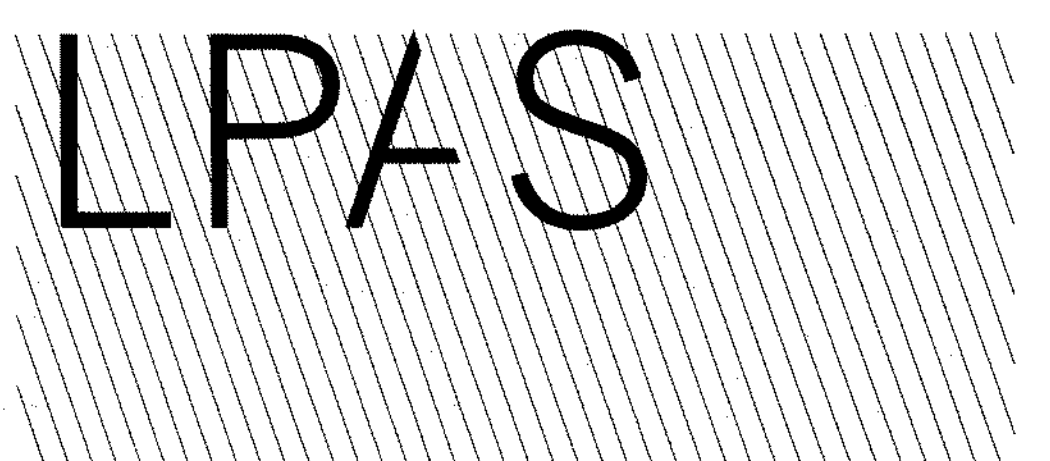
Signature of School District Official: \_\_\_\_\_ Date: \_\_\_\_\_  
 Print the School District Official's Name: \_\_\_\_\_

5 The location(s) of the proposed post indicator valve and fire department connection meet the requirements of this jurisdiction.  Yes  No

6 The location(s) of the detector check valve assembly meet the requirements of this jurisdiction.  Yes  No

7 Is the project located in a hazard severity zone area? (CBC, Chapter 7A, Section 701A.)  Yes  No  
 Check type if "Yes":  Moderate  High  Very High  WIFA  
 (If one of these boxes is checked, the project design must meet the requirements of Chapter 7A.)

8 COMMENTS (note deficiencies):



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COLLEGE OF MARIN  
INDIAN VALLEY CAMPUS

ORGANIC FARM  
PARKING LOT IMPROVEMENTS

MARIN, CA

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SITE ACCESSIBILITY  
PLAN

PROJECT NO: 1102-0005  
DATE: 05.19.17

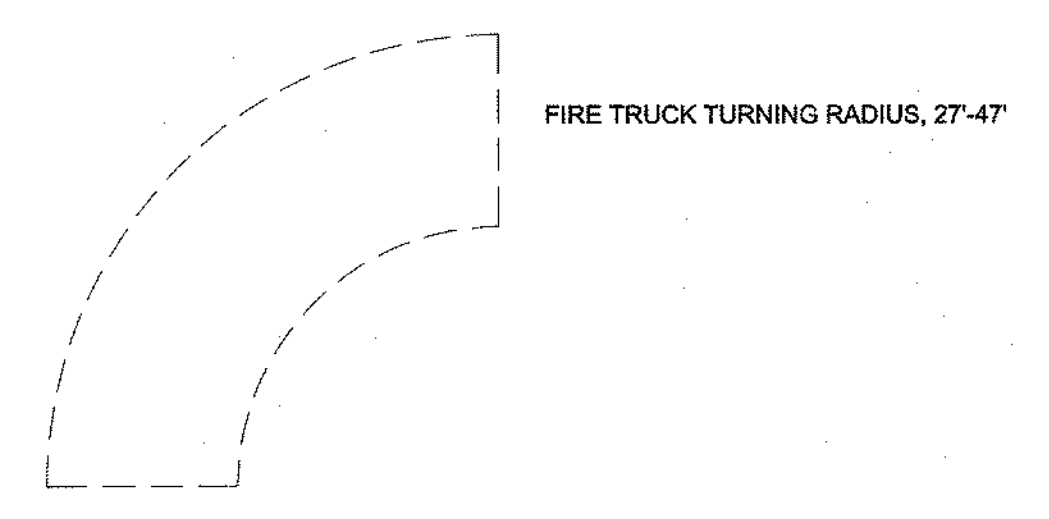
SHEET NO:

A0.30

**PARKING LOT DATA**

	REQ'D	PROVD
STANDARD SPACES	XX	97
STANDARD ACCESSIBLE SPACES	3	3
VAN ACCESSIBLE SPACES	1	1
TOTAL ACCESSIBLE SPACES	4	4

PARKING DATA B7



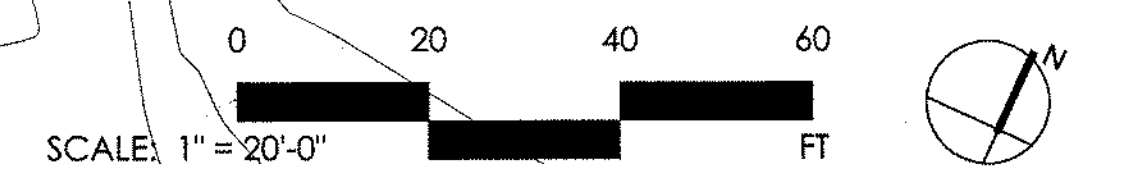
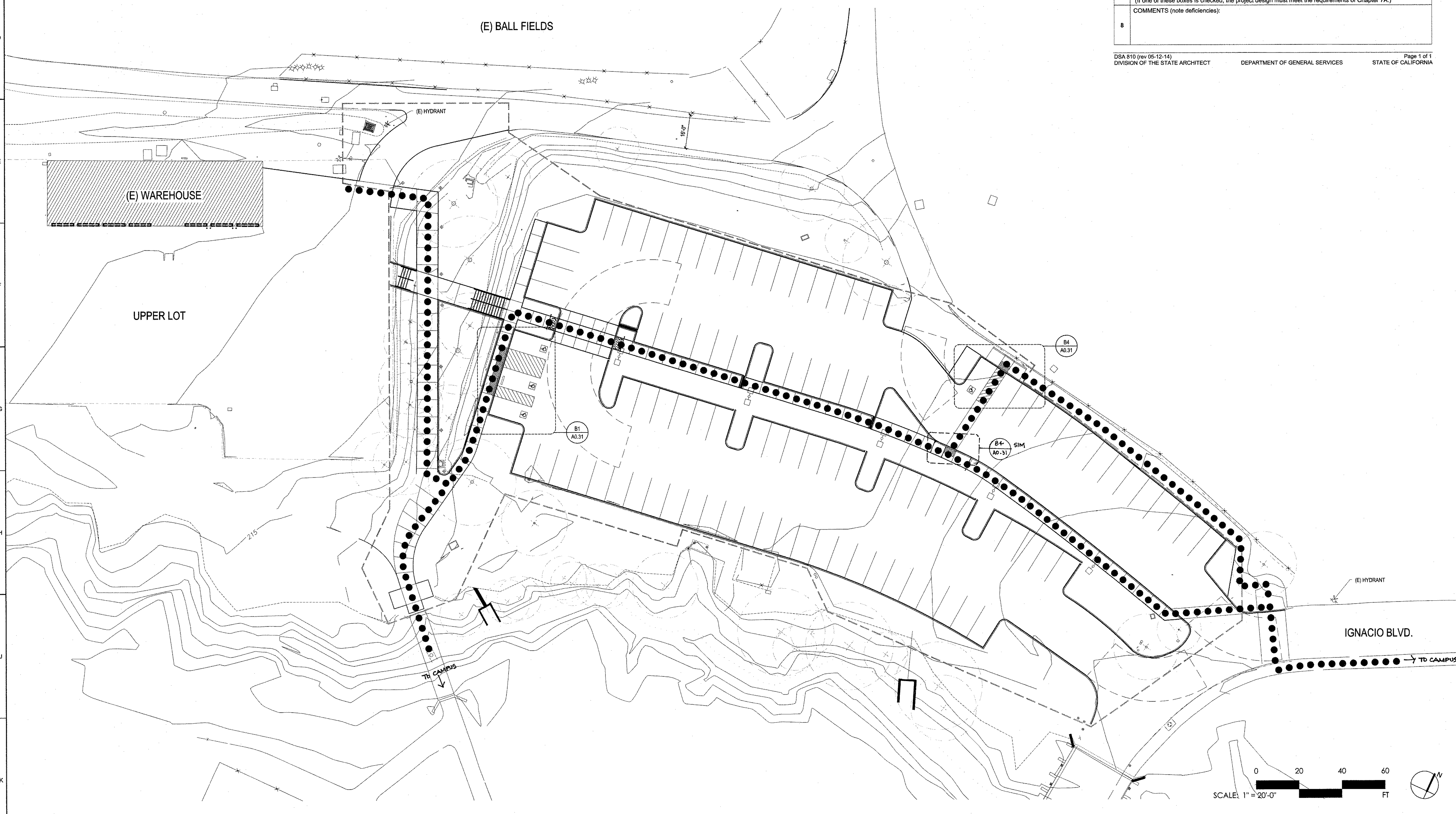
PATH OF TRAVEL (P.O.T.)  
CROSS SLOPE SHALL NOT EXCEED 2%.  
SEE NOTES D1 ON THIS SHEET

LEGEND C7

NOTES

- A DROP-OFF IS NOT INCLUDED IN THIS SCOPE OF WORK.
- PATH OF TRAVEL (P.O.T.): ARCHITECT HAS SURVEYED/INSPECTED THE PATH OF TRAVEL AS INDICATED ON THE PLANS AND HAS FOUND IT TO BE, OR HAS INDICATED ON THE PLANS REMEDIAL WORK WHICH WOULD CAUSE IT TO BE A BARRIER-FREE ACCESSIBLE ROUTE.
  - AT LEAST 48" IN WIDTH, OR AS APPROVED BY CODE.
  - WITHOUT ABRUPT LEVEL CHANGES EXCEEDING 1/2" IF BEVELED AT 1:2 MAX. SLOPE, OR VERT. LEVEL CHANGES EXCEEDING 1/4"
  - WITH A FIRM, STABLE, AND SLIP RESISTANT WALKING SURFACE
  - WITH A RUNNING SLOPE OF 1:20 OR LESS, UNLESS OTHERWISE INDICATED, AND A CROSS SLOPE OF 1:50 OR LESS
  - IS FREE OF OVERHEAD OBSTRUCTIONS WITHIN 80" ABOVE THE WALKING SURFACE, AND
  - IS FREE OF OBJECTS WHICH PROTRUDE MORE THAN 4" BETWEEN THE HEIGHTS OF 27" AND 80" ABOVE THE WALKING SURFACE
- THE PATH OF TRAVEL (P.O.T.) IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS IS COMPLIANT WITH THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT, THE POT WAS EXAMINED AND ANY ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WERE DETERMINED TO BE NON-COMPLIANT 1) HAVE BEEN IDENTIFIED AND 2) THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMPLIANCE HAVE BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. ANY NON-COMPLIANT ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE SO INDICATED IN THESE CONSTRUCTION DOCUMENTS. DURING CONSTRUCTION, IF POT ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CODE COMPLIANT ARE FOUND TO BE NON-COMPLYING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THEY SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT.

ACCESSIBLE PARKING & NOTES C10

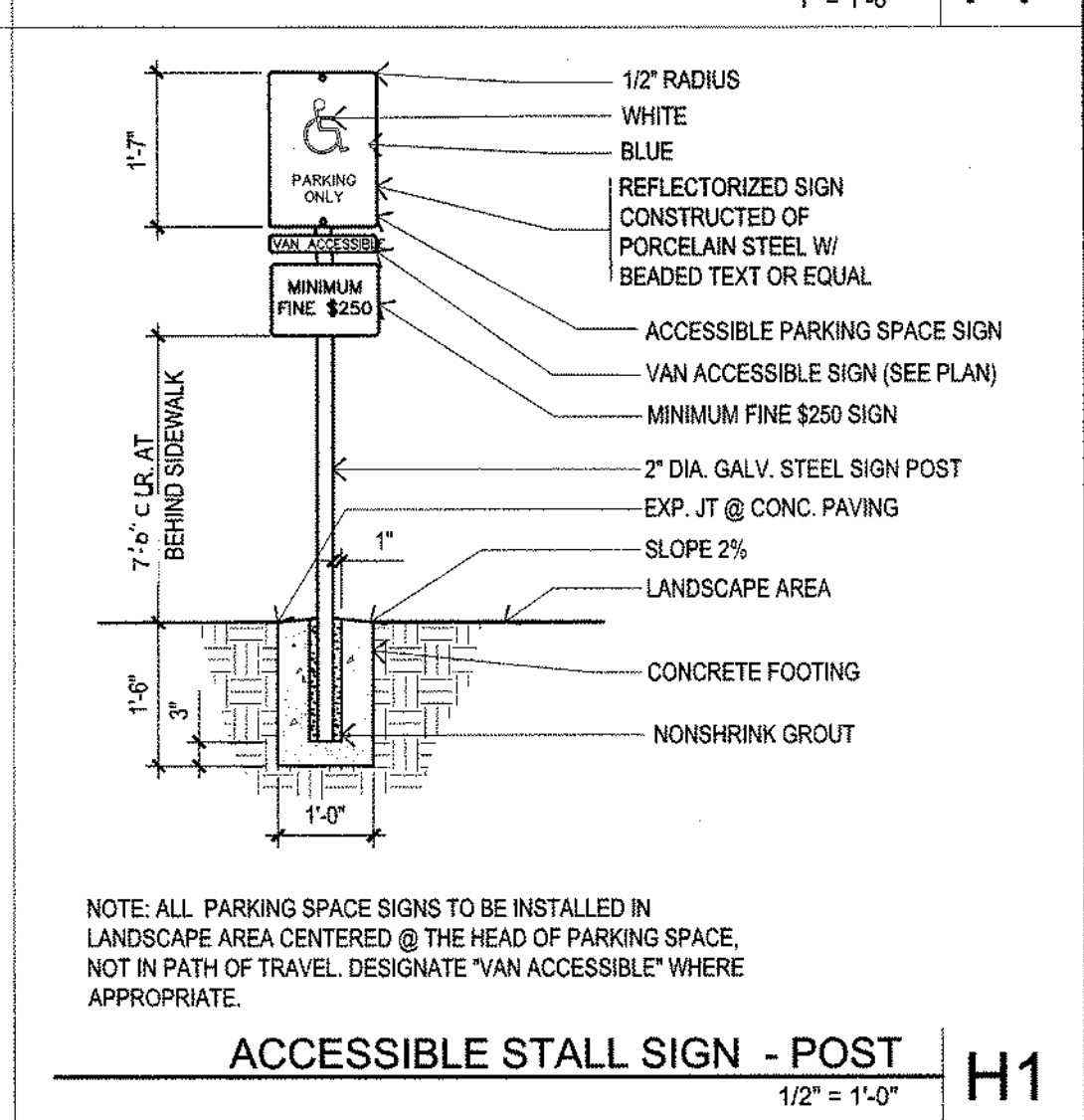
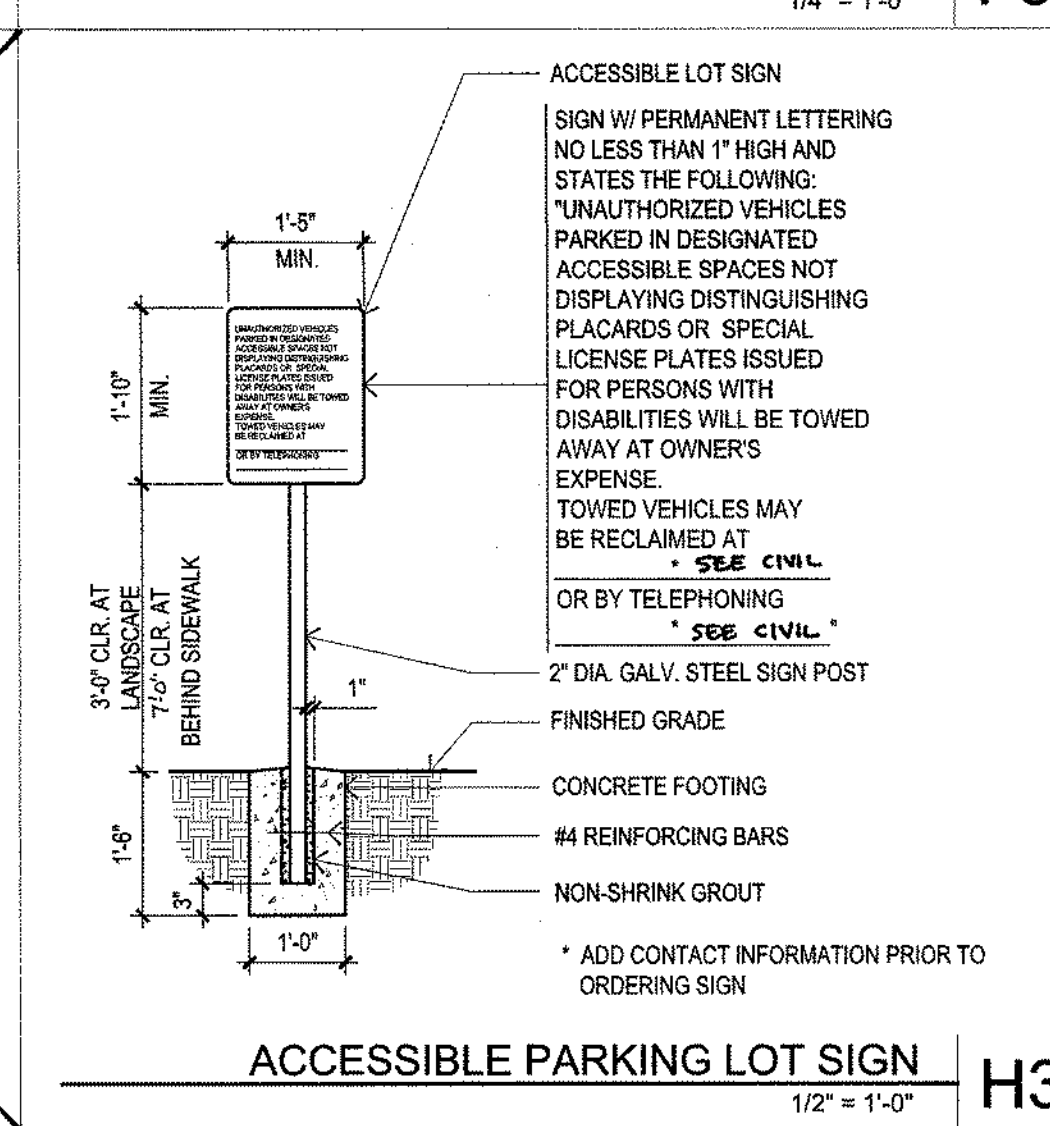
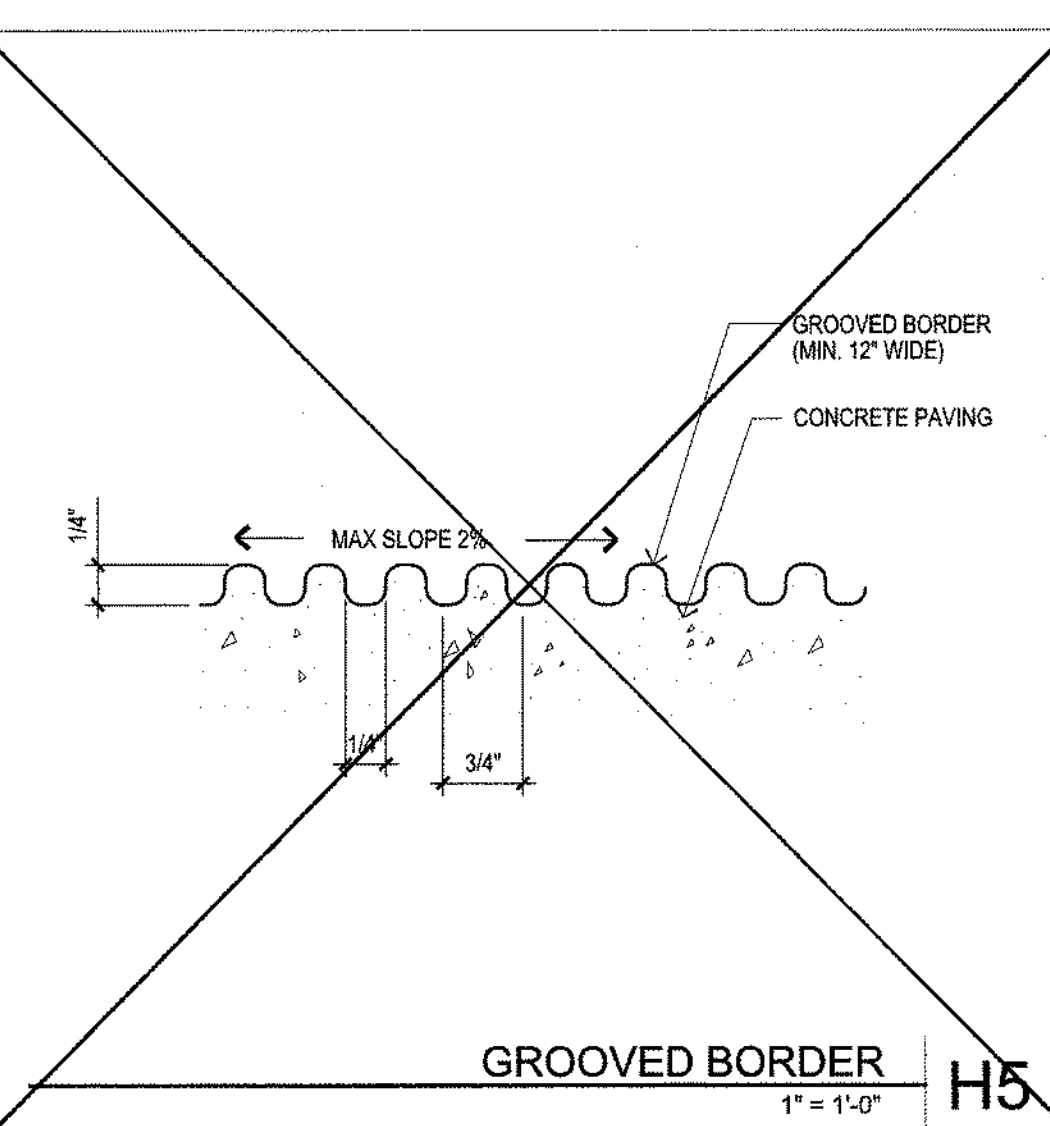
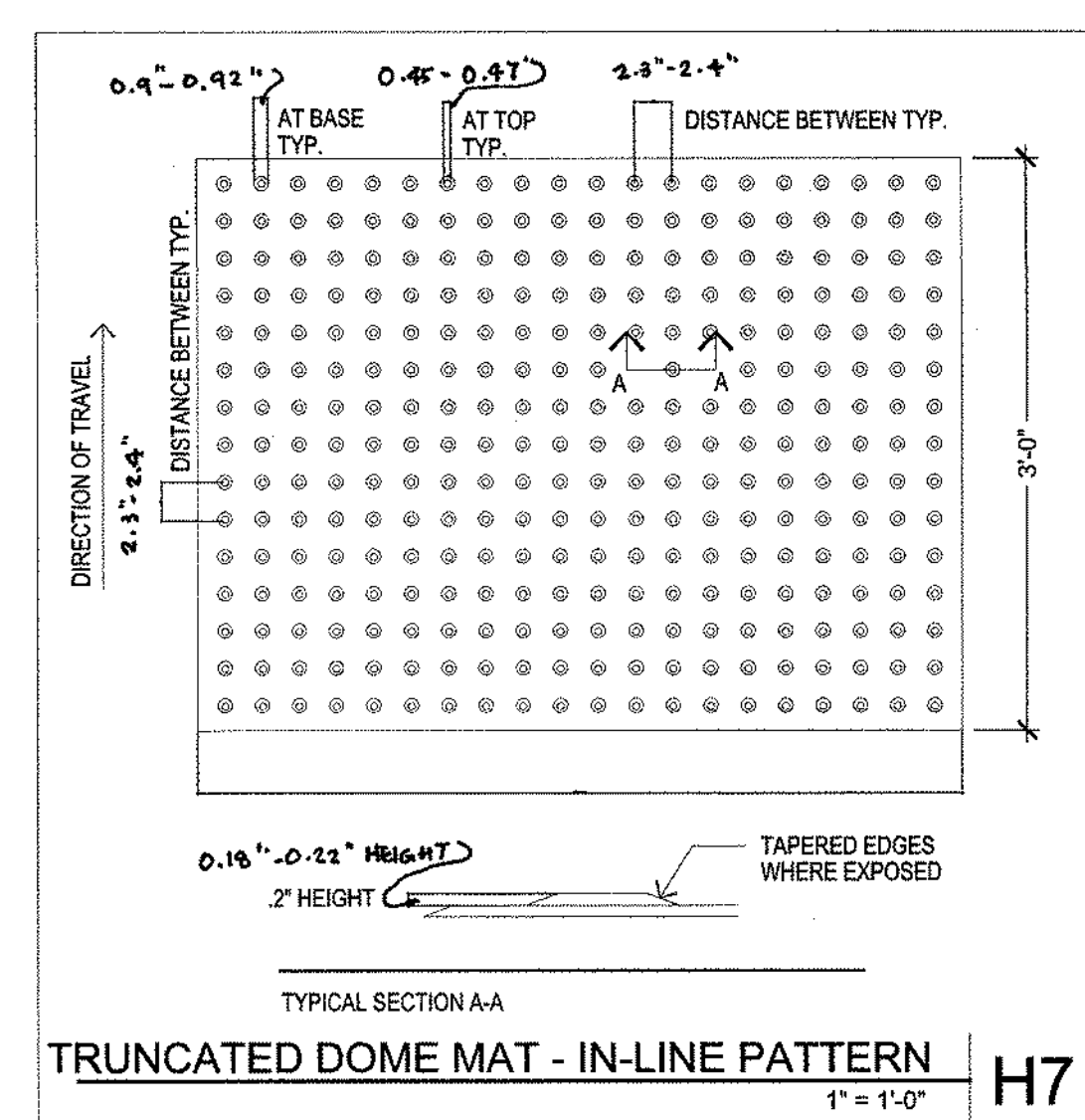
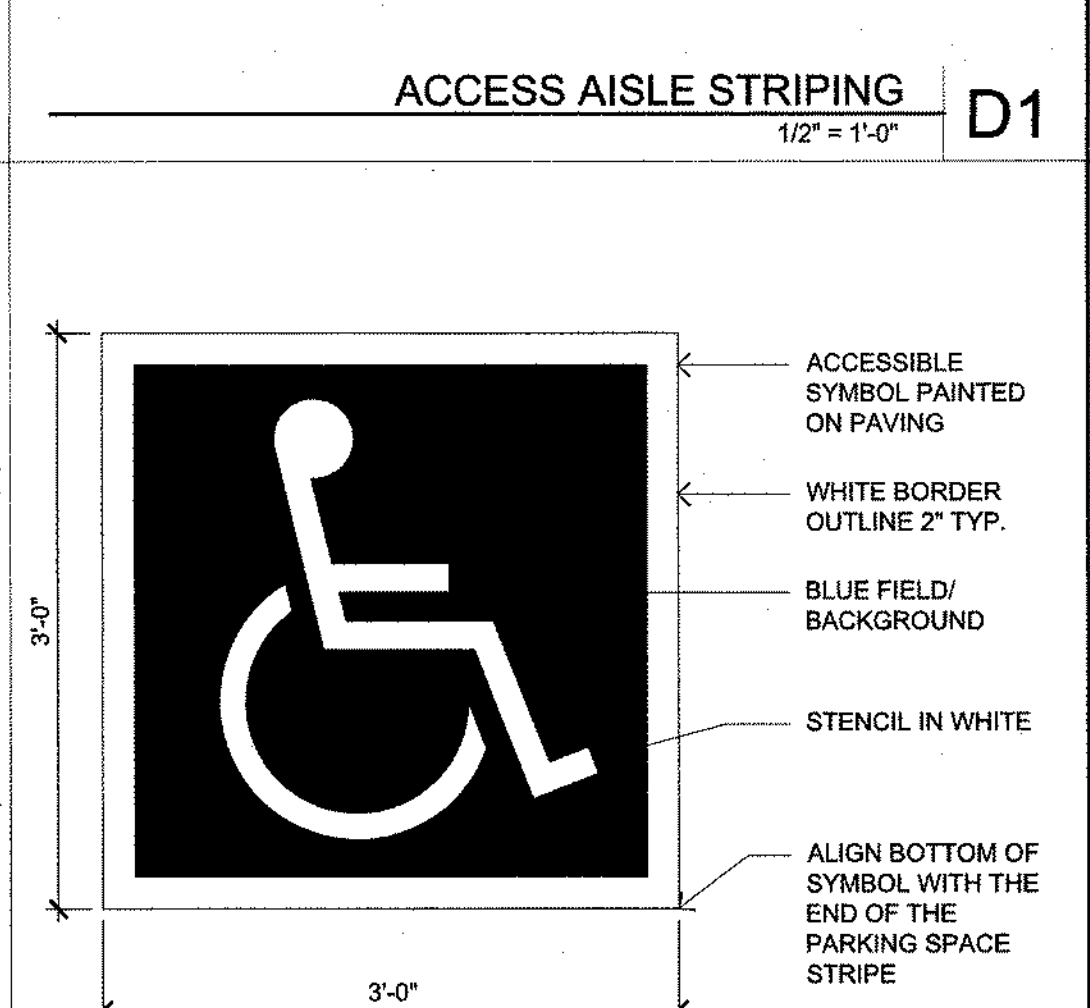
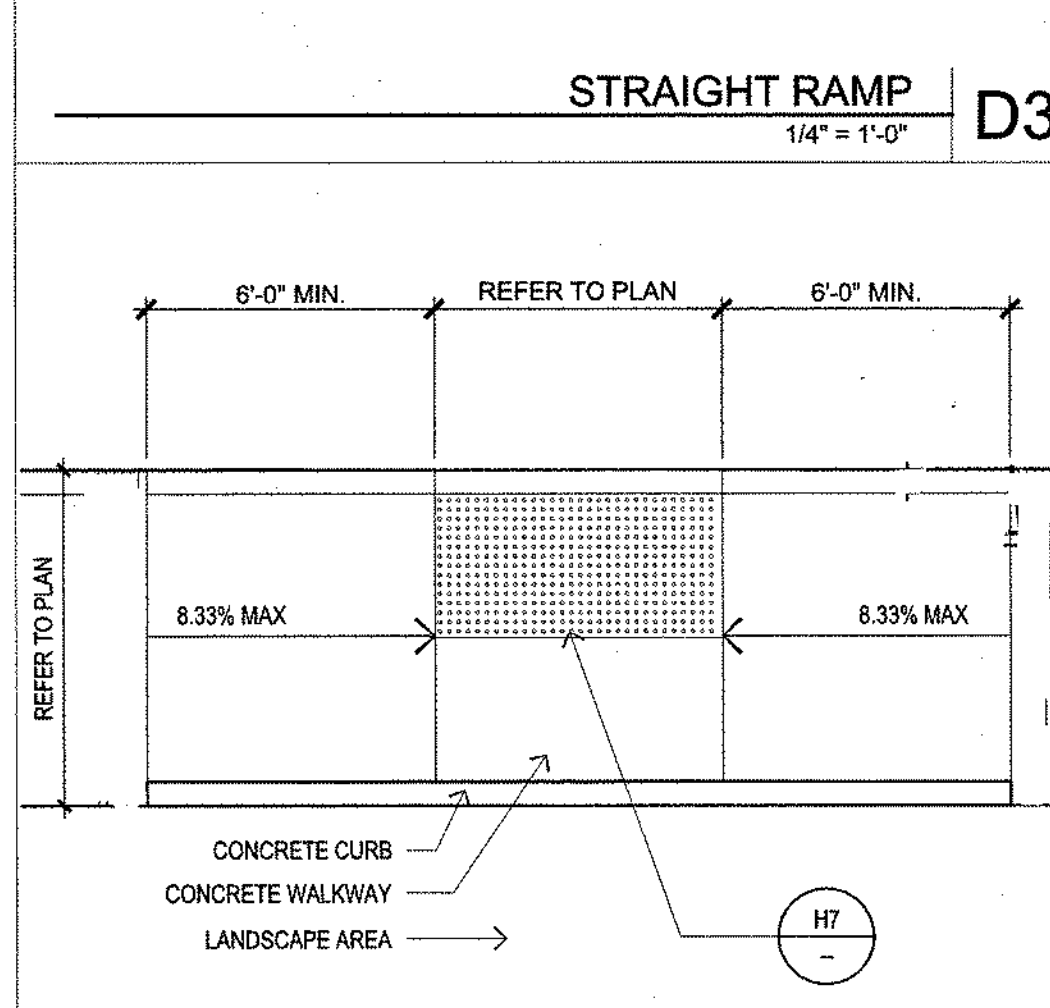
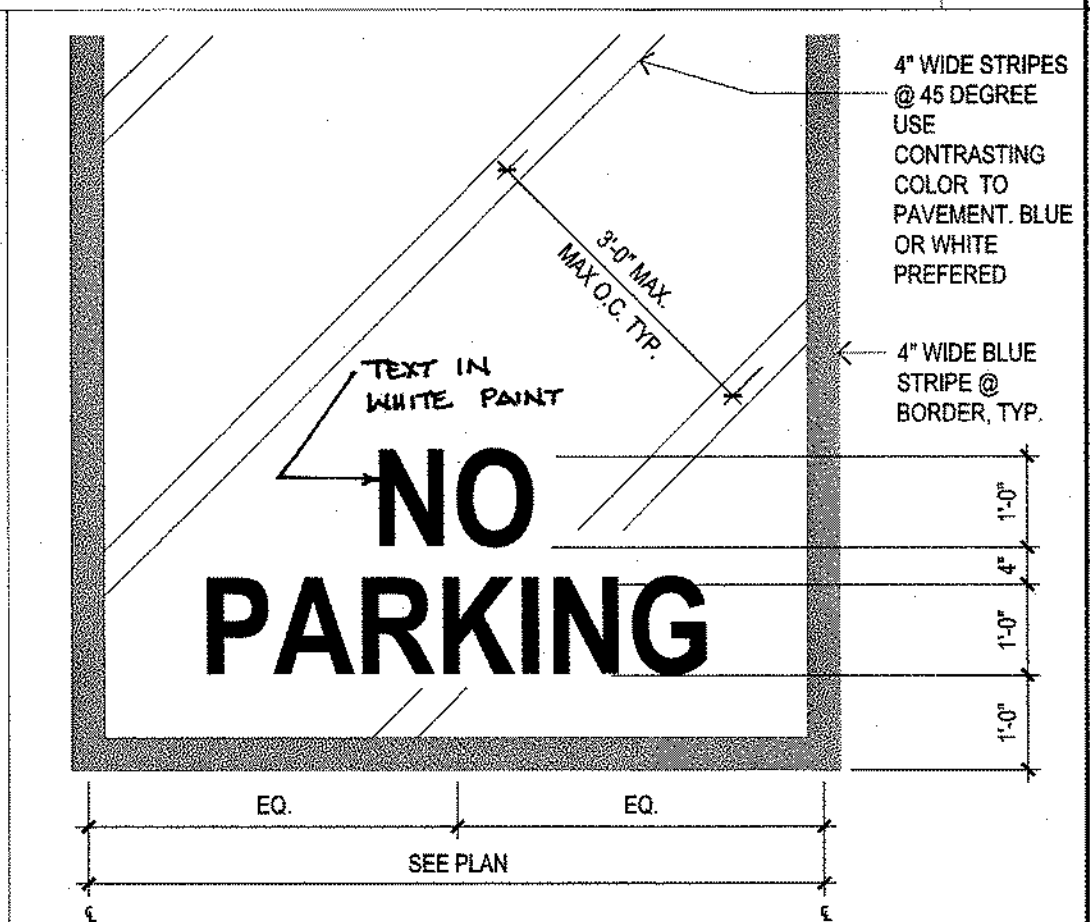
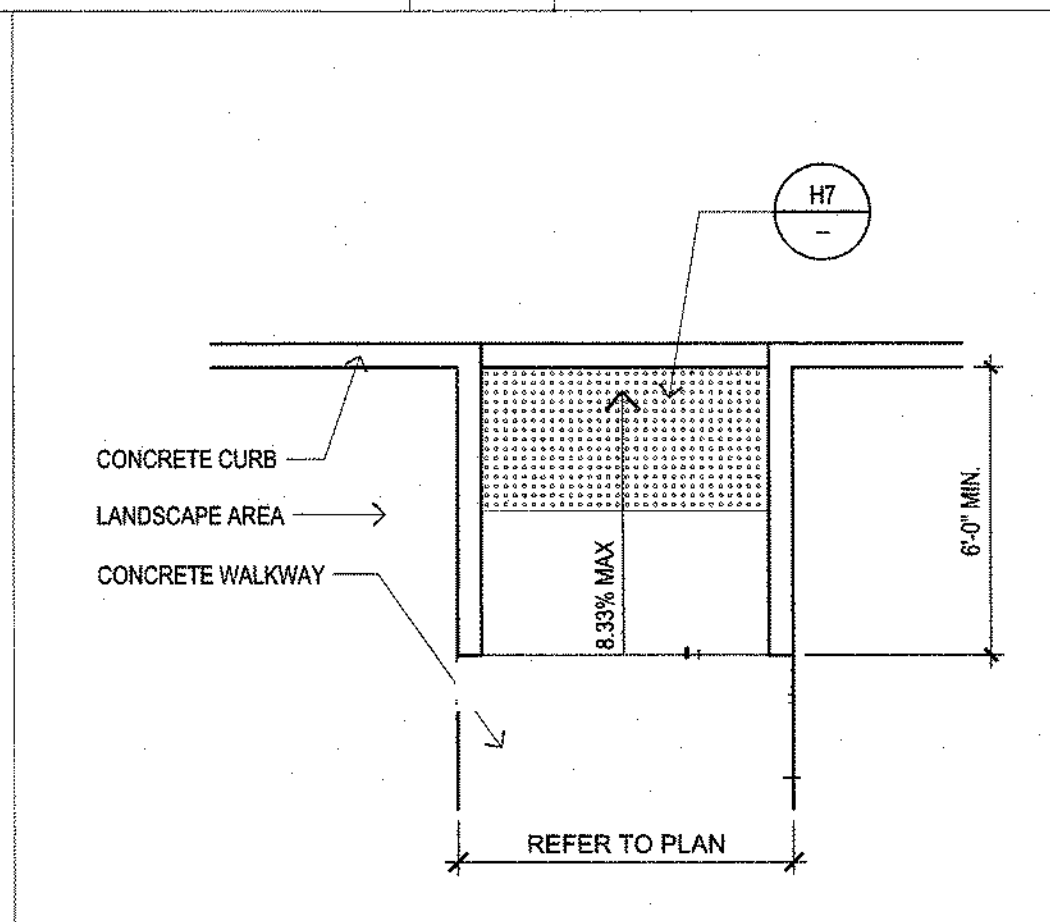
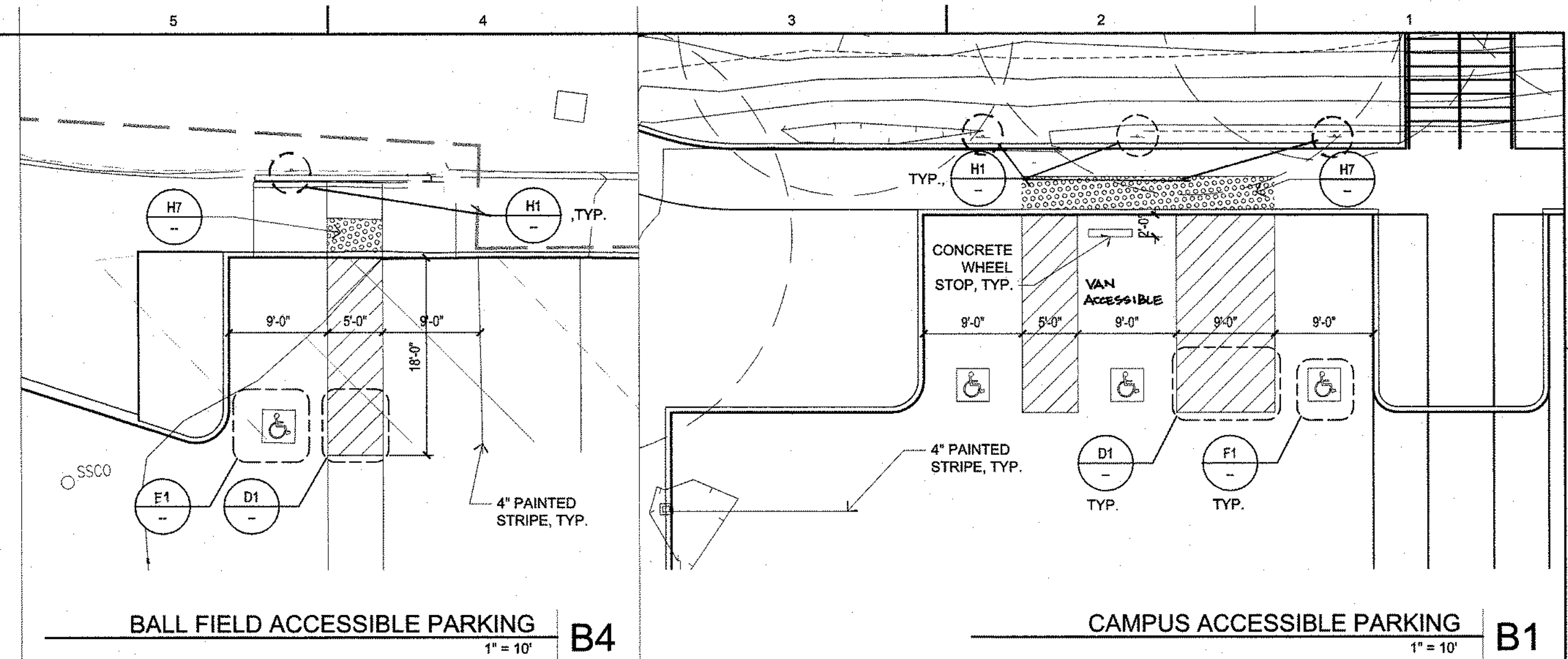




## COLLEGE OF MARIN INDIAN VALLEY CAMPUS

### ORGANIC FARM PARKING LOT IMPROVEMENTS

MARIN, CA



ARCHITECT'S STAMP

APPROVAL

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
OFFICE OF REGULATION SERVICES  
01-116739 o7c  
AC 100 FL 100 SS MA  
DATE 5/13/2017

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CONSULTANT

## ACCESSIBILITY DETAILS

PROJECT NO: 1102-0005  
DATE: 05.30.17

SHEET NO:

# A0.31

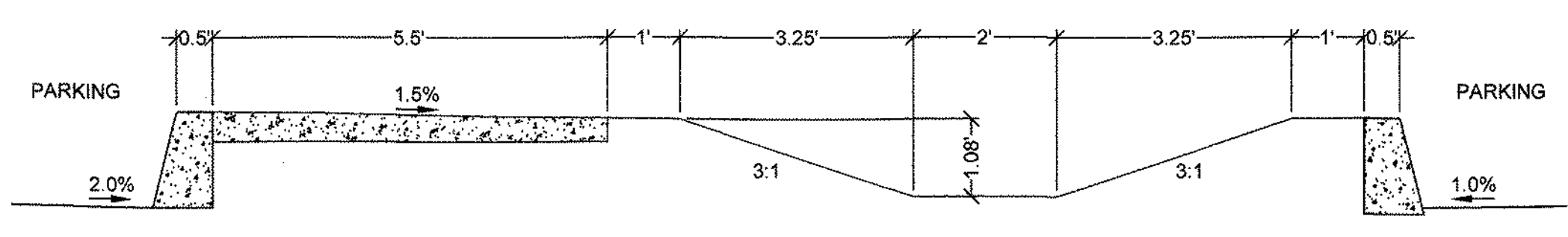
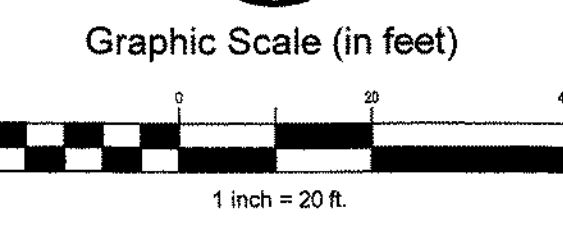


## COLLEGE OF MARIN INDIAN VALLEY CAMPUS

### ORGANIC FARM PARKING LOT IMPROVEMENTS

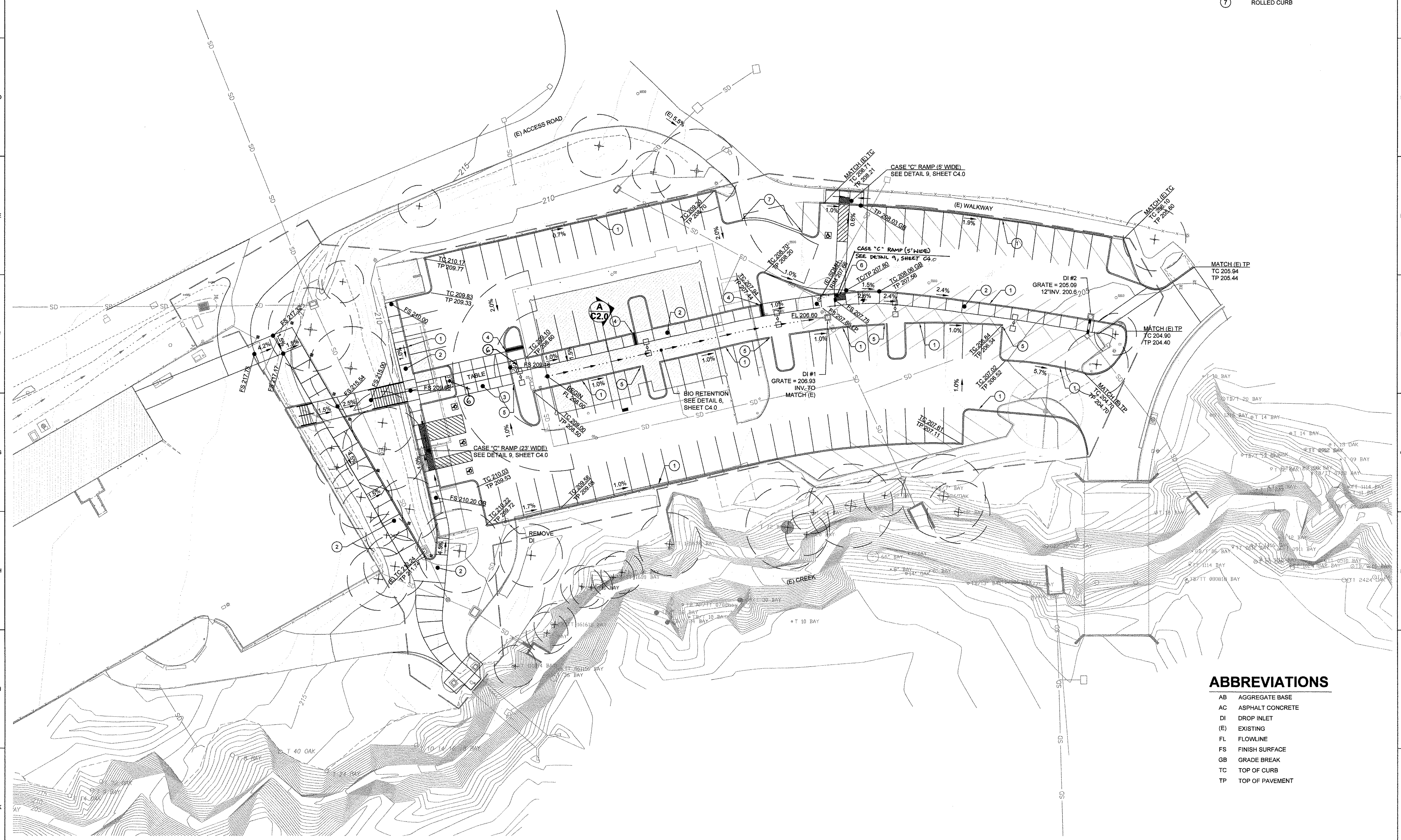
MARIN, CA

NO.	ISSUE	DATE
01	CLIENT REVIEW	04.27.17
02	DSA SUBMITTAL	05.15.17



#### KEYNOTES

- ① CONCRETE CURB SEE DETAIL 3, SHEET C4.0
- ② CONCRETE SIDEWALK SEE DETAIL 4, SHEET C4.0
- ③ SPEED TABLE SEE DETAIL 2, SHEET C4.0
- ④ SIDEWALK UNDERDRAIN SEE DETAIL 1, SEE SHEET C4.0
- ⑤ CURB OPENINGS
- ⑥ TRUNCATED DOMES PER CALTRANS STANDARD PLAN AB8A
- ⑦ ROLLED CURB



IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
OFFICE OF REGULATION SERVICES  
01-116731 o7c  
AC 120 FL 5 SS NA  
DATE 3/25/2017

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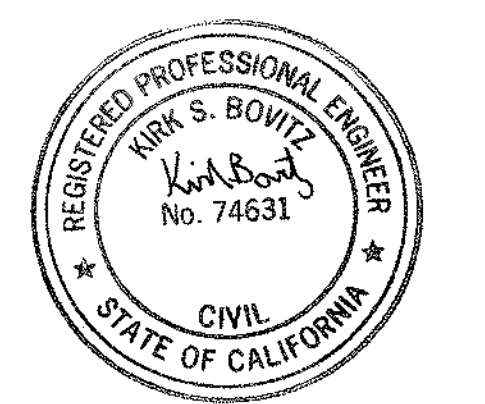
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CONSULTANT

**CSW ST 2**

**CSW/Stuber-Stroch Engineering Group, Inc.**

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Novato, CA 94949 Fax: 415.883.9835  
Civil & Structural Engineers  
Surveying & Mapping  
Environmental Planning  
Land Planning  
Construction Management



#### ABBREVIATIONS

- AB AGGREGATE BASE
- AC ASPHALT CONCRETE
- DI DROP INLET
- (E) EXISTING
- FL FLOWLINE
- FS FINISH SURFACE
- GB GRADE BREAK
- TC TOP OF CURB
- TP TOP OF PAVEMENT

PROJECT NO: 4108034  
DATE: 4/17/17

## GRADING AND DRAINAGE PLAN

SHEET NO:  
**C2.0**



## COLLEGE OF MARIN INDIAN VALLEY CAMPUS

### ORGANIC FARM PARKING LOT IMPROVEMENTS

MARIN, CA

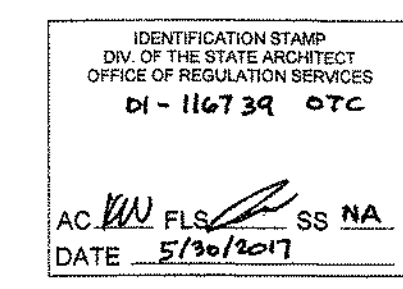
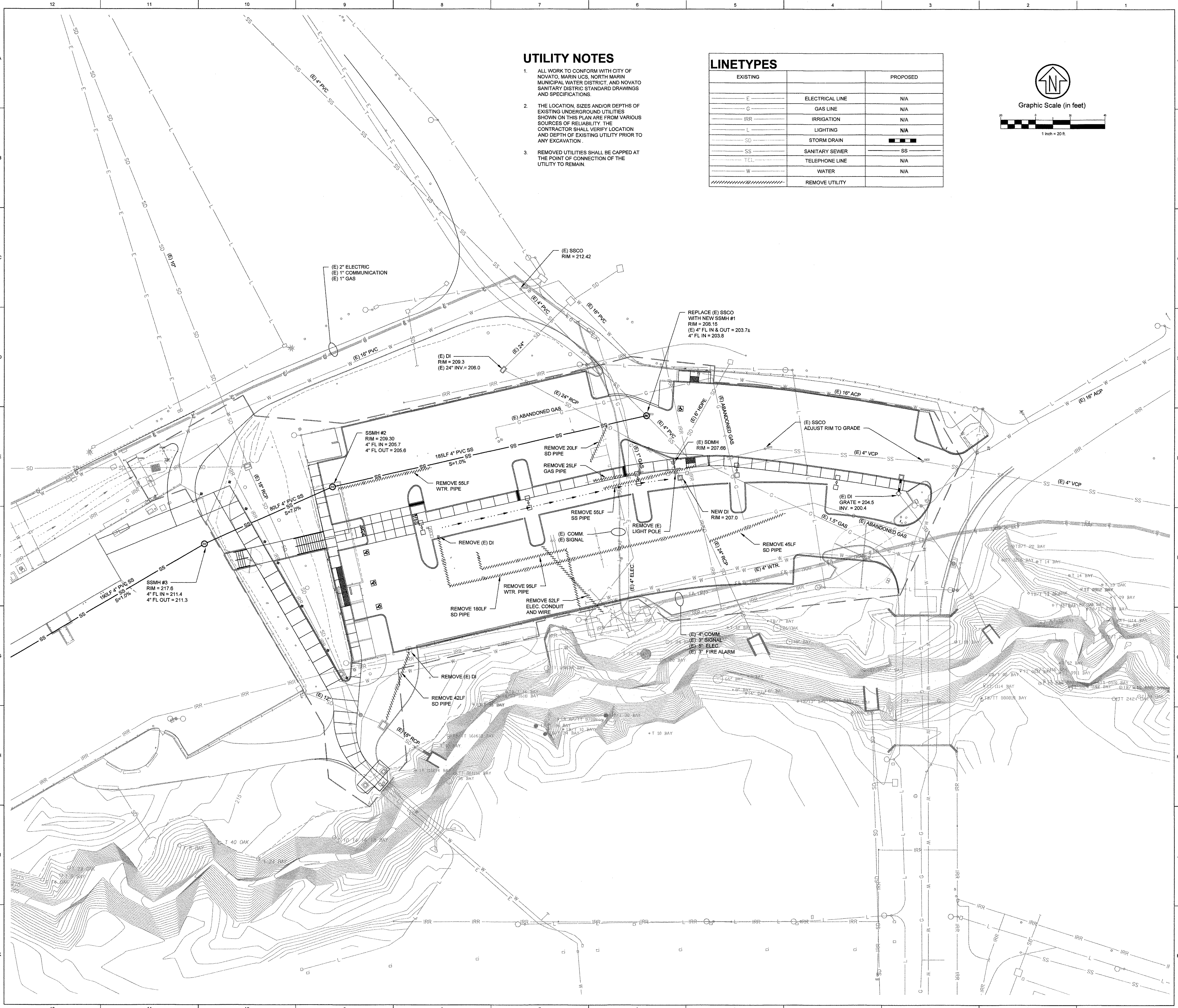
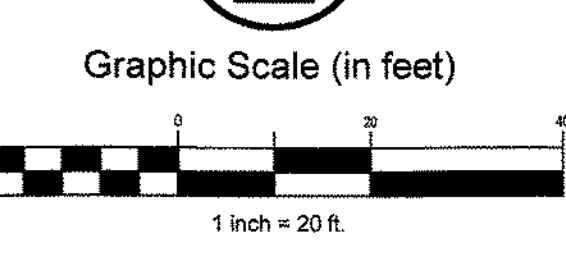
NO.	ISSUE	DATE
01	CLIENT REVIEW	04.27.17
02	DSA SUBMITTAL	05.15.17

### UTILITY NOTES

- ALL WORK TO CONFORM WITH CITY OF NOVATO, MARIN UCS, NORTH MARIN MUNICIPAL WATER DISTRICT, AND NOVATO SANITARY DISTRICT STANDARD DRAWINGS AND SPECIFICATIONS.
- THE LOCATION, SIZES AND/OR DEPTHS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE FROM VARIOUS SOURCES OF RELIABILITY. THE CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF EXISTING UTILITY PRIOR TO ANY EXCAVATION.
- REMOVED UTILITIES SHALL BE CAPPED AT THE POINT OF CONNECTION OF THE UTILITY TO REMAIN.

### LINETYPES

EXISTING		PROPOSED
E	ELECTRICAL LINE	N/A
G	GAS LINE	N/A
IRR	IRRIGATION	N/A
L	LIGHTING	N/A
SD	STORM DRAIN	
SS	SANITARY SEWER	SS
TEL	TELEPHONE LINE	N/A
W	WATER	N/A
	REMOVE UTILITY	



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CONSULTANT

**CSW ST 2**

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Civil & Structural Engineers  
Surveying & Mapping  
Environmental Planning  
Land Planning  
Construction Management



PROJECT NO: 4108034  
DATE: 4/17/17

### UTILITY PLAN

SHEET NO:  
**C3.0**



## COLLEGE OF MARIN INDIAN VALLEY CAMPUS

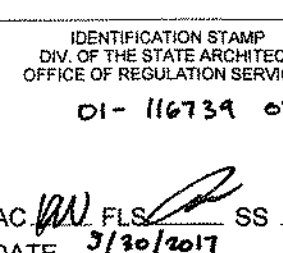
### ORGANIC FARM PARKING LOT IMPROVEMENTS

MARIN, CA

NO.	ISSUE	DATE
01	CLIENT REVIEW	04.27.17
02	DSA SUBMITTAL	05.15.17

NO.	ISSUE	DATE
01	CLIENT REVIEW	04.27.17
02	DSA SUBMITTAL	05.15.17

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Civil & Structural Engineers  
Surveying & Mapping  
Environmental Planning  
Land Planning  
Construction Management

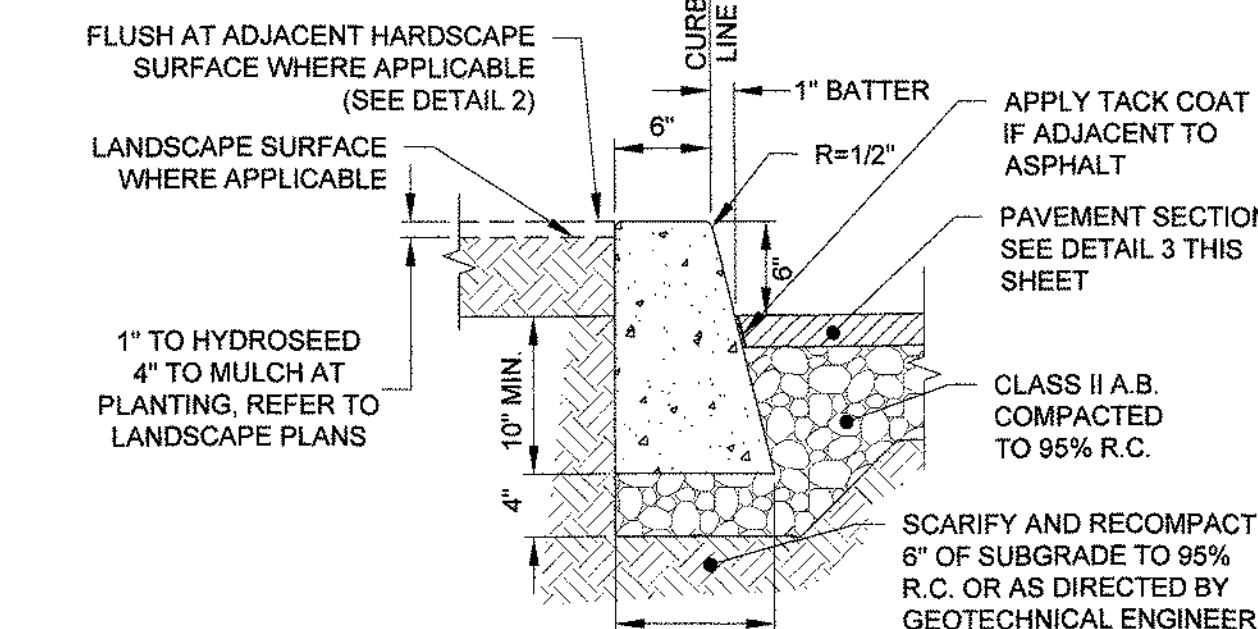


PROJECT NO: 4108034

DATE: 4/17/17

CIVIL  
DETAILS  
SHEET NO:

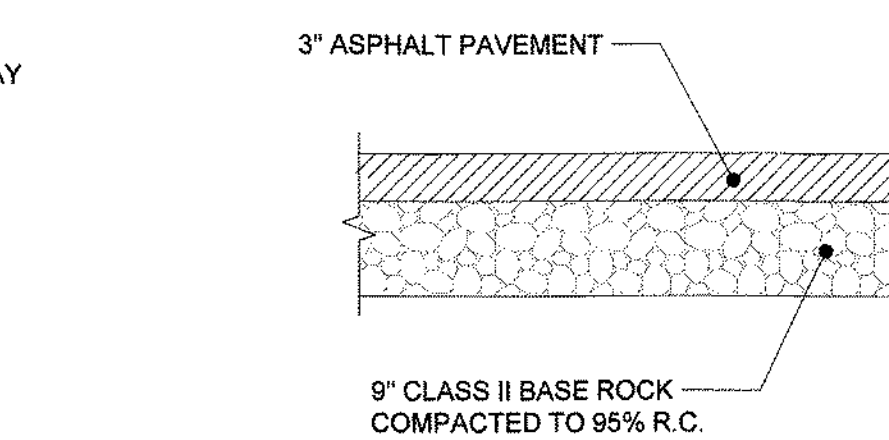
# C4.0



- NOTES:**
- WHERE CONCRETE WALK IS ADJACENT TO CURB, PROVIDE DOWELED ISOLATION JOINT BETWEEN WALK AND BACK OF CURB.
  - CONTROL JOINTS CONSISTING OF 1" DEEP SCORES SHALL BE PLACED AT 10' INTERVALS O.C. - ALL SIDES EXCEPT BOTTOM.
  - WHERE WALK IS ADJACENT TO CURB, THE JOINTS OF THE CURB SHALL ALIGN WITH THE JOINTS IN THE ADJACENT PAVING. SEE LANDSCAPE PLANS.
  - SEE LANDSCAPE PLANS FOR TYPICAL JOINT DETAILS.

### 3 STANDARD CONCRETE CURB

SCALE: 1" = 1'



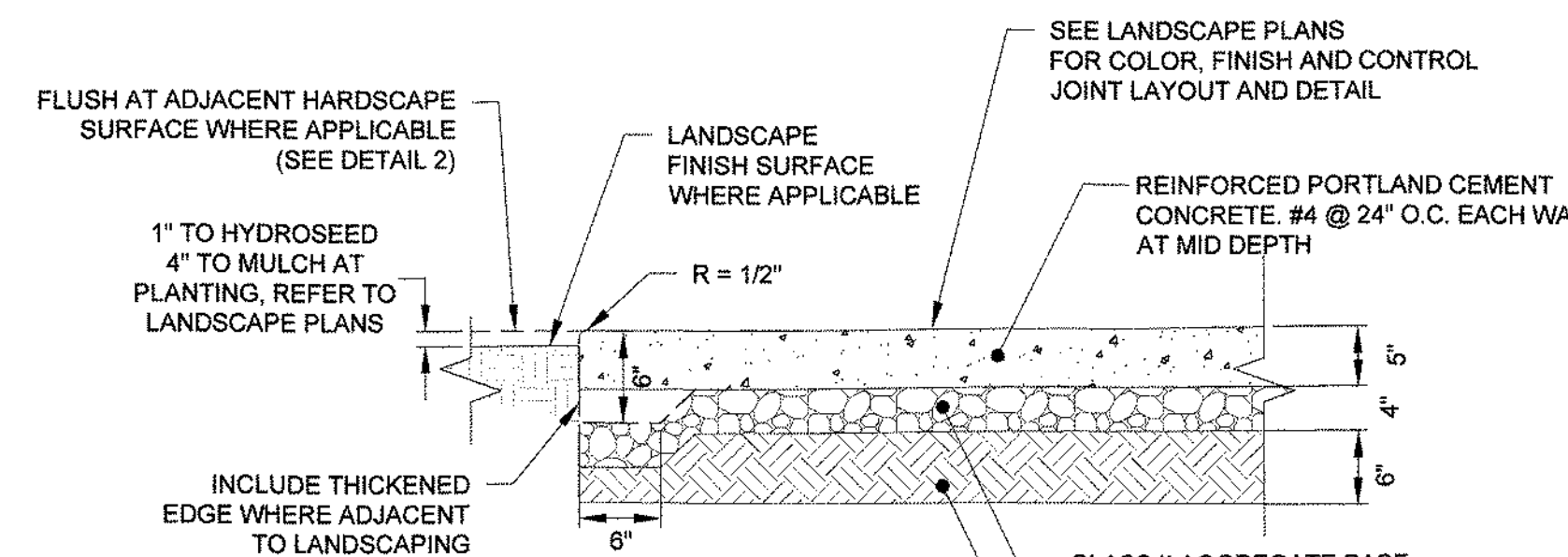
- NOTES:**
- PAVEMENT SECTION BASED ON A T.I. OF 5.5 AND AN R-VALUE OF 5.
  - REFER TO PROJECT GEOTECHNICAL REPORT FOR SUBGRADE PREPARATION AND OTHER REQUIREMENTS.

### 5 STANDARD ASPHALT PAVEMENT SECTION

SCALE: 1" = 1'

### 2 SPEED TABLE DETAIL

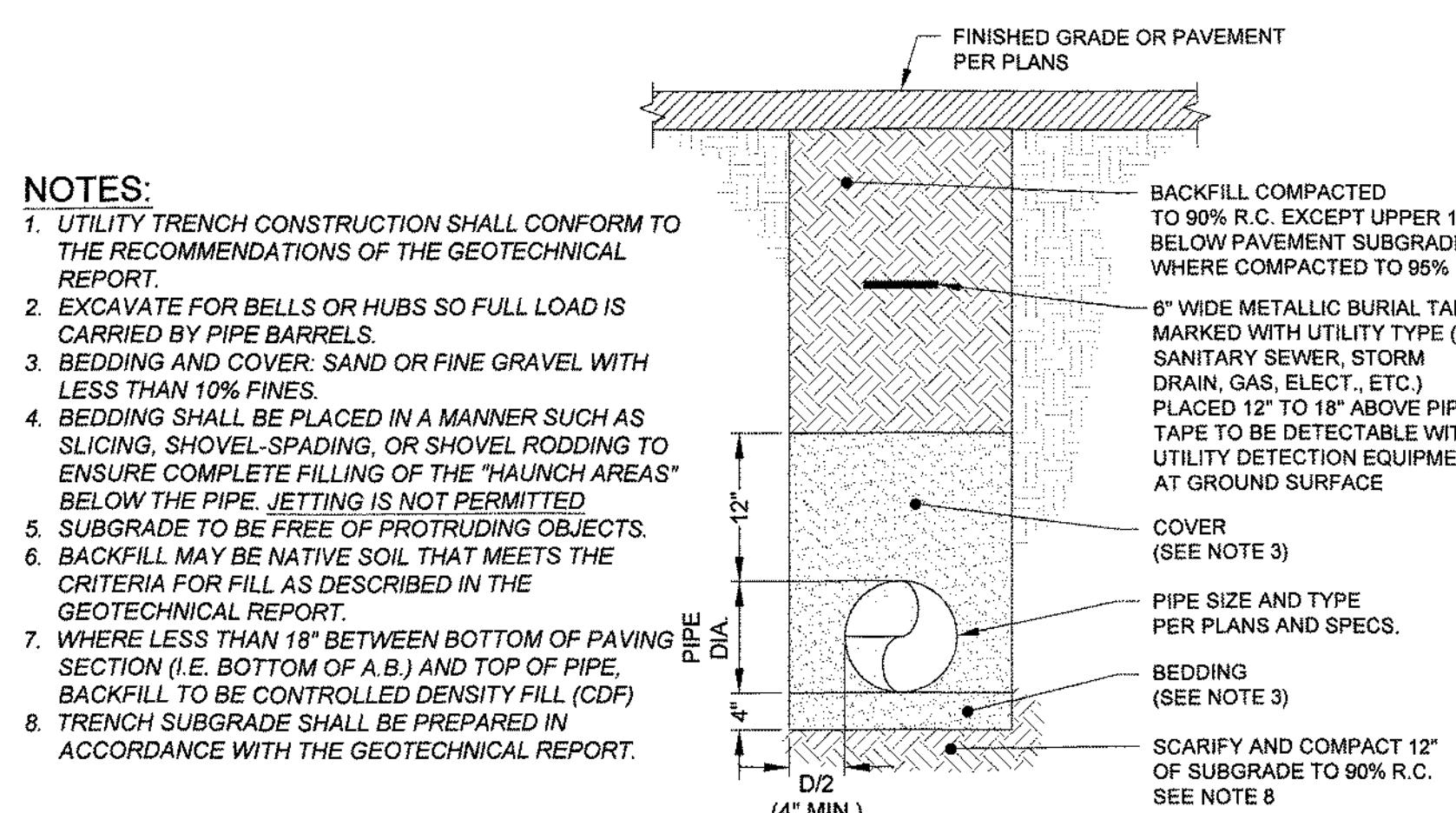
SCALE: 1" = 5'



- NOTES:**
- ALL TREAD SURFACES SHALL BE SLIP RESISTANT.
  - REFER TO PROJECT LANDSCAPING PLANS FOR COLOR, PATTERN, TEXTURE, FINISH, AND LOCATION OF JOINTS.
  - REFER TO GEOTECHNICAL REPORT FOR SUBGRADE PREPARATION.

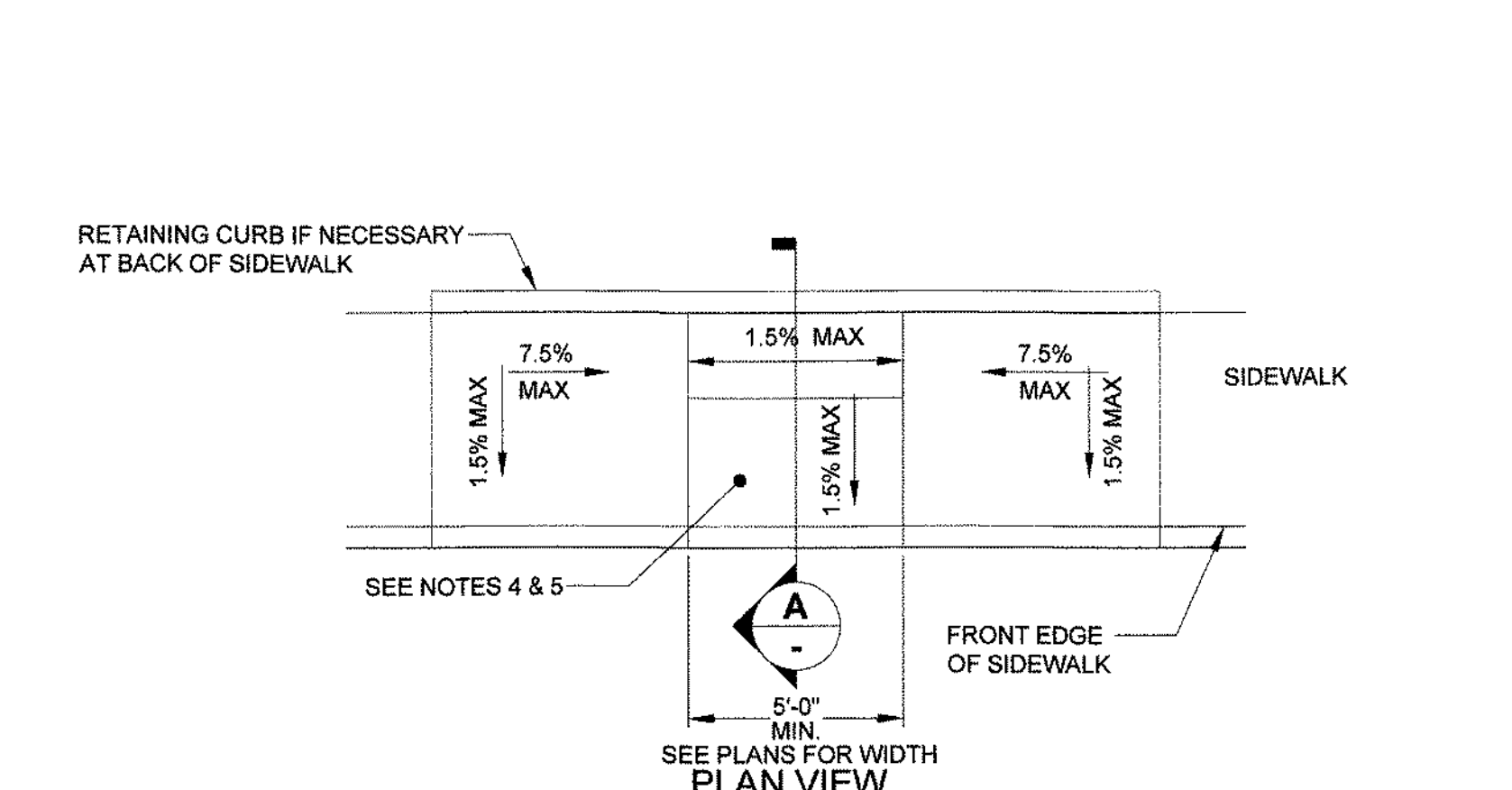
### 4 PEDESTRIAN CONCRETE SECTION

SCALE: 1" = 1'



### 7 PIPE TRENCH DETAIL

SCALE: 1" = 1'

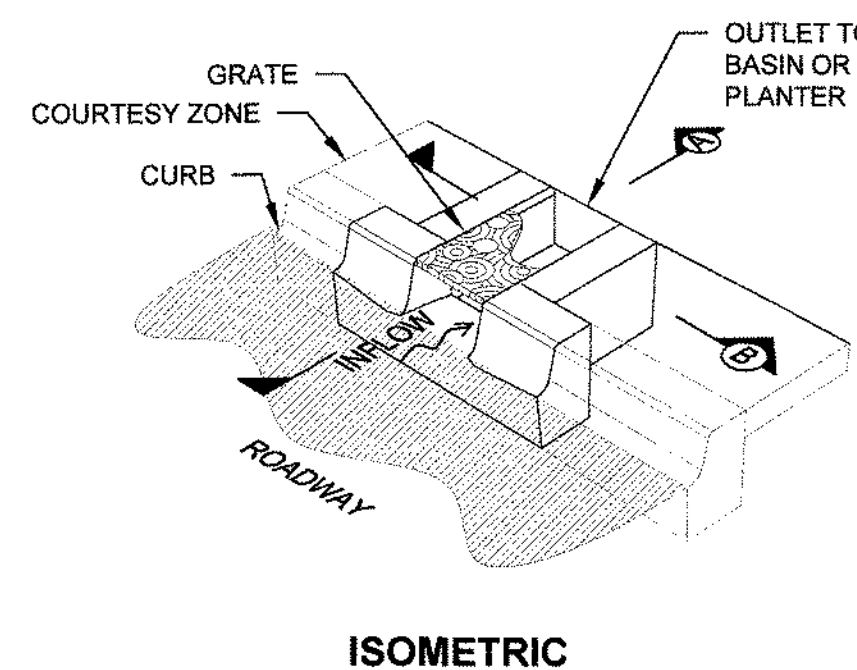


- NOTES:**
- THE MINIMUM WIDTH OF THE RAMP SHALL BE 5'-0".
  - TRANSITIONS FROM RAMPS AND LANDINGS TO WALKS, GUTTERS OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.
  - THE ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP SHALL NOT EXCEED 5% COUNTERSLOPE WITHIN 2'-0" OF THE BOTTOM OF THE CURB RAMP.
  - CURB RAMPS SHALL HAVE A YELLOW DETECTABLE WARNING SURFACE THAT EXTENDS THE FULL WIDTH AND 3'-0" DEPTH OF THE RAMP. DETECTABLE WARNING SURFACES SHALL CONFORM TO CALTRANS STANDARD PLAN A88A.
  - THE EDGE OF THE DETECTABLE WARNING SURFACE NEAREST THE STREET SHALL BE BETWEEN 6" AND 8" FROM THE GUTTER FLOWLINE.
  - SIDEWALK AND RAMP THICKNESS, "T", SHALL BE 3/4" MINIMUM U.N.O.
  - UTILITY PULL BOXES, MANHOLES, VAULTS AND ALL OTHER UTILITY FACILITIES WITHIN THE BOUNDARIES OF THE CURB RAMP WILL BE RELOCATED OR ADJUSTED TO GRADE BY THE OWNER PRIOR TO OR IN CONJUNCTION WITH CURB RAMP CONSTRUCTION.
  - FOR RETROFIT CONDITIONS, REMOVAL AND REPLACEMENT OF CURB APRON WILL BE AT THE CONTRACTOR'S OPTION, U.N.O.

### 9 TYPE "C" CURB RAMP (PER CALTRANS STD. RSP A88A)

SCALE: 1/4" = 1' (U.N.O.)

- CONSTRUCTION NOTES:**
- SLOPE TO PROVIDE AT LEAST 1" INCH DROP OVER LENGTH OF CHANNEL OR A MINIMUM OF 2 PERCENT, WHICHEVER IS LARGER.
  - ALL GRATES SHALL BE REMOVABLE, RATED PER THE ANTICIPATED LOADING, AND BOLTED IN PLACE OR OUTFITTED WITH APPROVED TAMPER-RESISTANT LOCKING MECHANISM. FLUSH OR RECESSED IN GRATE. GRATE SHALL BE STEEL PLATE WITH NO OPENINGS.
  - HORIZONTAL CONTROL JOINTS SHALL BE PROVIDED EVERY 10 LINEAR FEET, OR PER MANUFACTURER'S RECOMMENDATIONS.
- GENERAL NOTES:**
- ALL MATERIAL AND WORKMANSHIP FOR TRENCH DRAIN ASSEMBLY SHALL CONFORM TO APPLICABLE SPECIFICATIONS AND APPLICABLE CODES.
  - BOND NEW CURB TO EXISTING CURB WITH EPOXY AND DOWEL CONNECTION.
  - APPLY EPOXY BONDING AGENT AT ALL TRENCH DRAIN CONSTRUCTION COLD JOINTS.



ISOMETRIC

- CONSTRUCTION NOTES:**
- SCARIFY SUBGRADE BEFORE INSTALLING BIORETENTION AREA AGGREGATE AND BIORETENTION SOIL MEDIA.
  - INSTALL UNDERDRAIN WITH HOLES FACING DOWN. UNDERDRAIN DISCHARGE ELEVATION SHALL BE NEAR BOTTOM OF AGGREGATE LAYER. COMPACT EACH 6" LIFT OF BIORETENTION SOIL MEDIA WITH LANDSCAPE ROLLER OR BY LIGHTLY WETTING. IF WETTING, LET DRY OVERNIGHT BEFORE PLANTING.
  - NEVER WORK WITHIN BIORETENTION AREA LIMITS DURING RAIN OR UNDER WET CONDITIONS.
  - KEEP ALL HEAVY MACHINERY OUTSIDE BIORETENTION AREA LIMITS.
  - CONTRACTOR SHALL PROVIDE SUBMITTALS CERTIFYING CLASS 2 PERM MEETS CALTRANS SPECIFICATION 88-2.02F(3) AND BIORETENTION SOIL MEET REQUIREMENTS OF BASMAA POST-CONSTRUCTION MANUAL.
  - CONTRACTOR SHALL NOTIFY CIVIL ENGINEER 48 HOURS PRIOR TO INSTALLATION OF CLASS 2 PERM AND BIORETENTION SOIL FOR INSPECTION.

### BIORETENTION AREA CONSTRUCTION NOTES:

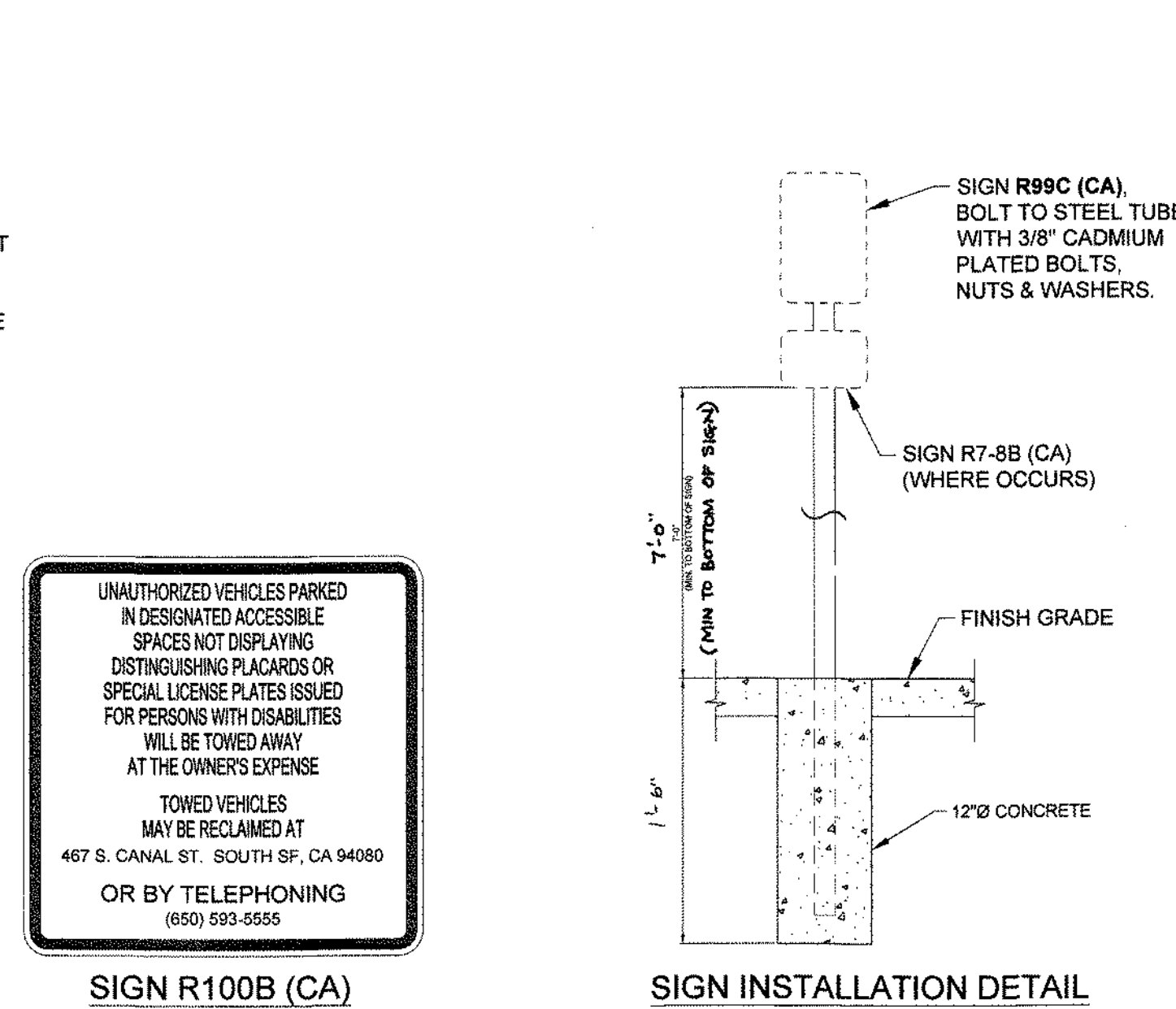
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- CONTRACTOR SHALL NOTIFY CIVIL ENGINEER 48 HOURS PRIOR TO INSTALLATION OF CLASS 2 PERM AND BIORETENTION SOIL FOR INSPECTION.

- BIORETENTION SOIL MEDIA TO BE OF THE FOLLOWING CONSISTENCY:
- ~60-70% SAND
  - ~20-40% COMPOSTED ORGANIC MATTER
  - ~5% CLAY
  - MIN. INFILTRATION RATE = 5"/HR

### 6 BIORETENTION AREA DETAIL

SCALE: 1" = 1'

- NOTES:**
- THE WORDS "NO PARKING", SHALL BE PAINTED IN WHITE LETTERS NO LESS THAN 1'-0" HIGH AND LOCATED SO THAT VISIBLE TO TRAFFIC ENFORCEMENT OFFICIALS. SEE REVISED CALTRANS STD. PLAN RSP A88B FOR DETAILS OF THE "NO PARKING" PAVEMENT MARKING.
  - WHERE A VAN ACCESSIBLE PARKING SPACE IS PROVIDED THE STALL SHALL BE 12'-0" WIDE, THE LOADING AND UNLOADING ACCESS AISLE SHALL BE 5'-0" WIDE MINIMUM, AND SHALL BE ON THE PASSENGER SIDE OF THE VEHICLE AS THE VEHICLE IS GOING FORWARD INTO THE PARKING SPACE.
  - A R100B (CA) SIGN SHALL BE POSTED IN A CONSPICUOUS PLACE AT EACH ENTRANCE TO OFF-STREET PARKING FACILITIES OR IMMEDIATELY ADJACENT TO AND VISIBLE FROM EACH STALL. THE SIGN SHALL INCLUDE THE ADDRESS WHERE THE TOWED VEHICLE MAY BE RECLAIMED AND THE TELEPHONE NUMBER OF THE LOCAL TRAFFIC LAW ENFORCEMENT AGENCY. (SEE PLAN FOR LOCATION)
  - ISA = INTERNATIONAL SYMBOL OF ACCESSIBILITY
  - SEE DISTRICT STANDARD SIGNAGE REQUIREMENTS AND LANDSCAPE PLANS FOR ADDITIONAL SIGN REQUIREMENTS.
  - SEE DISTRICT STANDARDS & LANDSCAPE PLANS FOR ADDITIONAL SIGN REQUIREMENTS



SIGN INSTALLATION DETAIL (NTS)

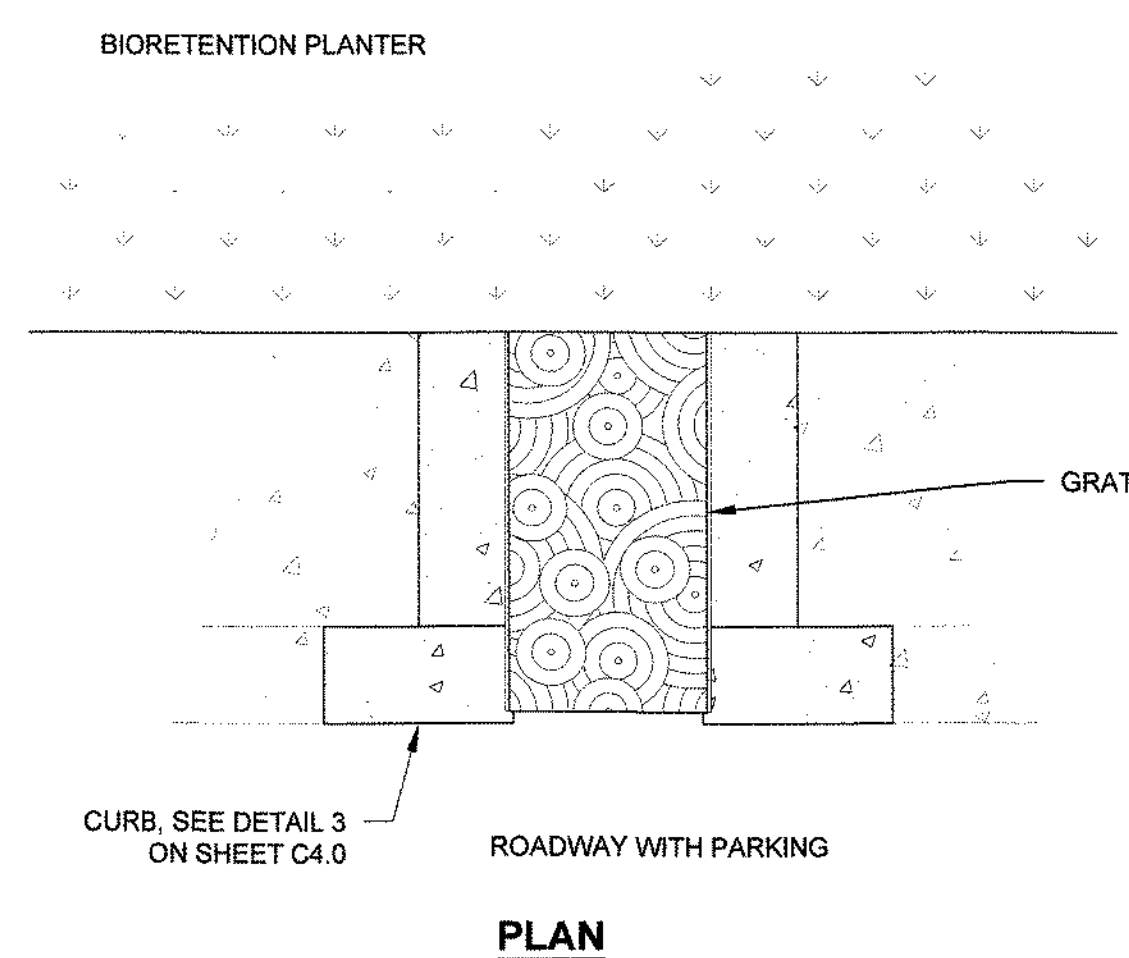
UNAUTHORIZED VEHICLES PARKED IN DESIGNATED ACCESSIBLE SPACES (NOT INCLUDING DISTINGUISHING PLACARDS OR SPECIAL LICENSE PLATES ISSUED FOR PERSONS WITH DISABILITIES) WILL BE TOWED AWAY AT THE OWNER'S EXPENSE.

TOWED VEHICLES MAY BE RECLAIMED AT 467 S. CANAL ST., SUITE 100, CA 94903 OR BY TELEPHONING 850 993 6555

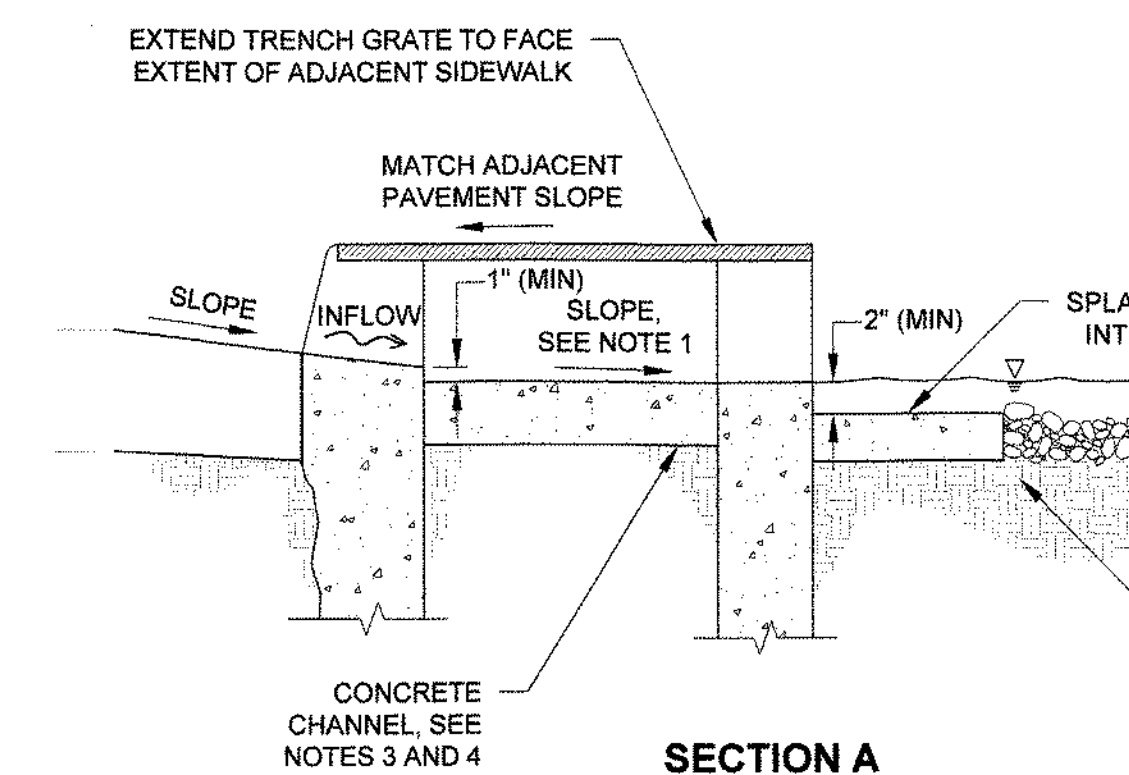
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SIGN R99C (CA) (NTS)

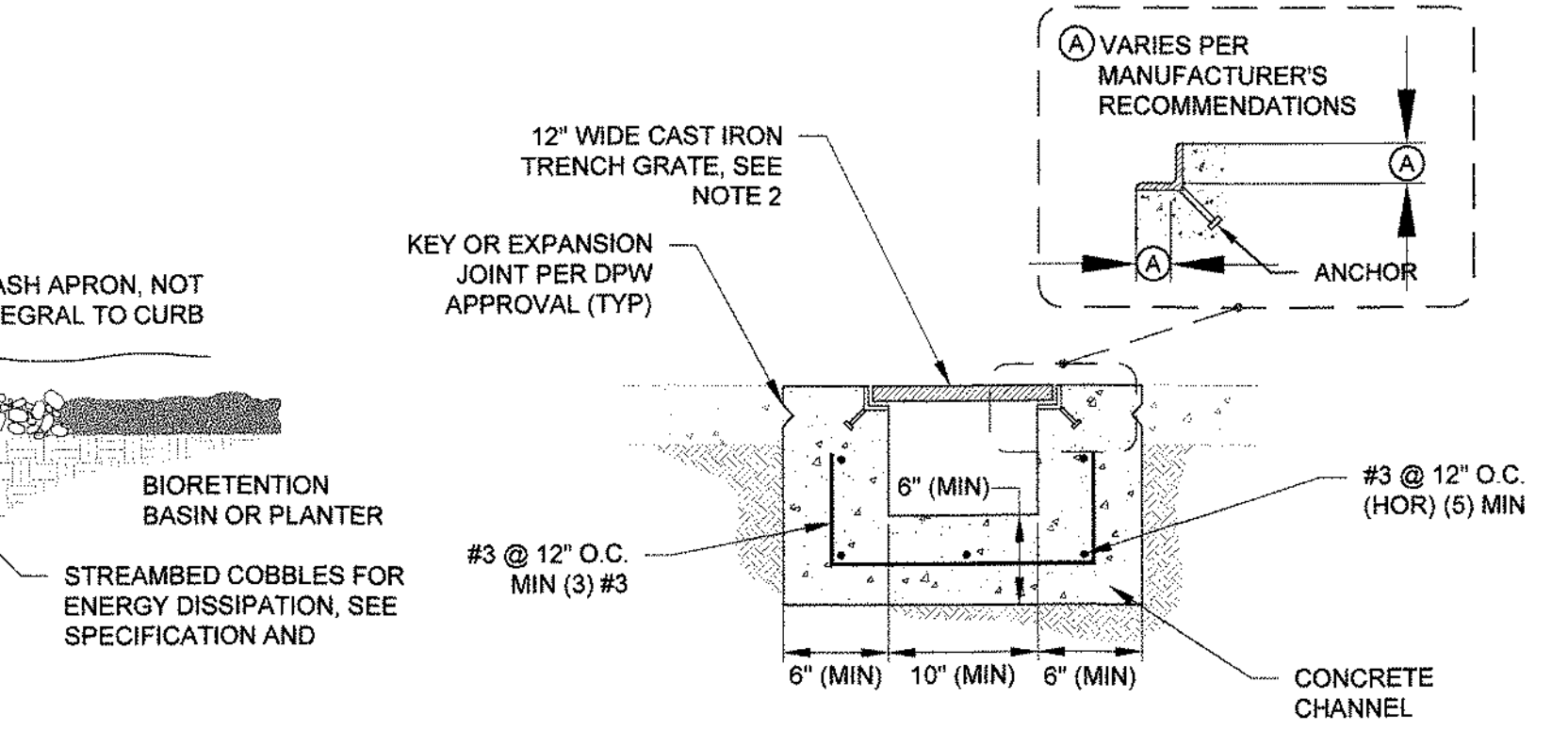
SIGN R100B (CA) (NTS)



PLAN



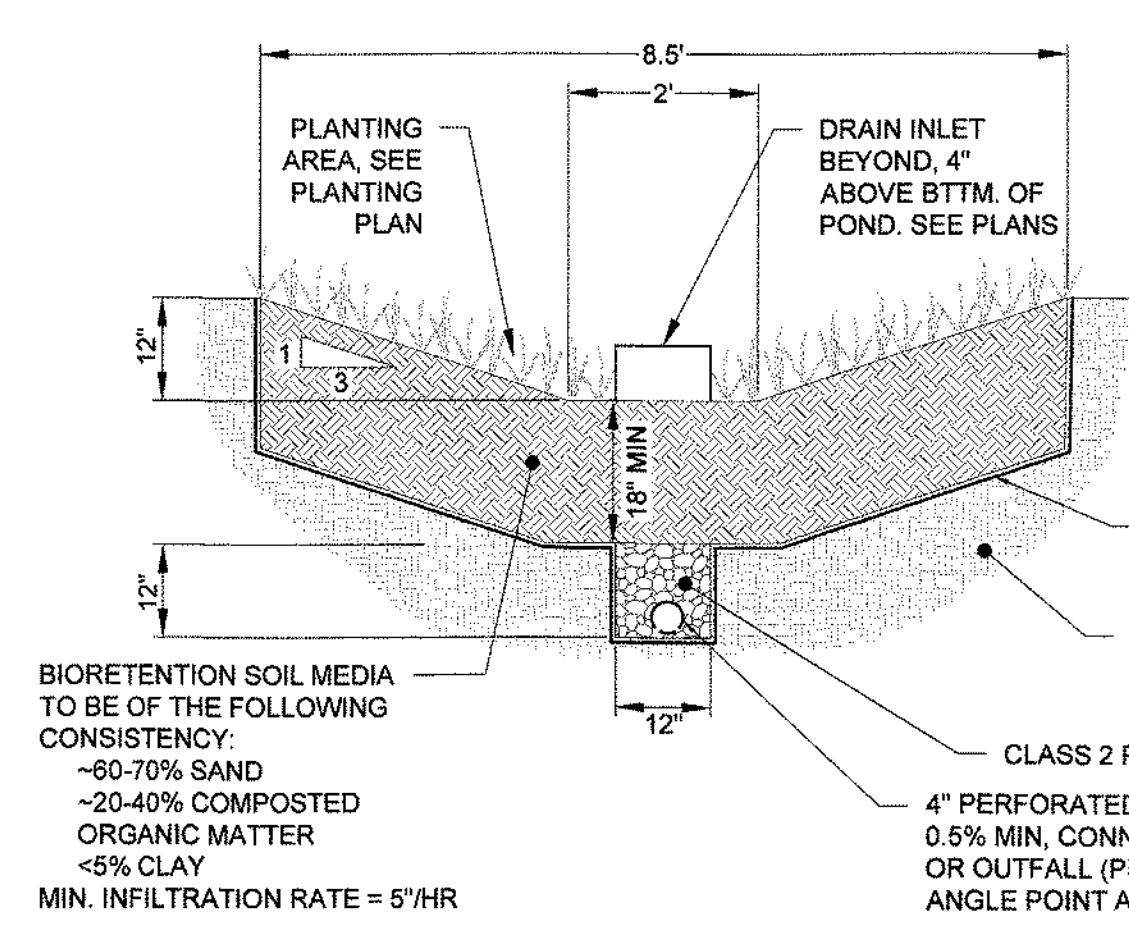
SECTION A



SECTION B

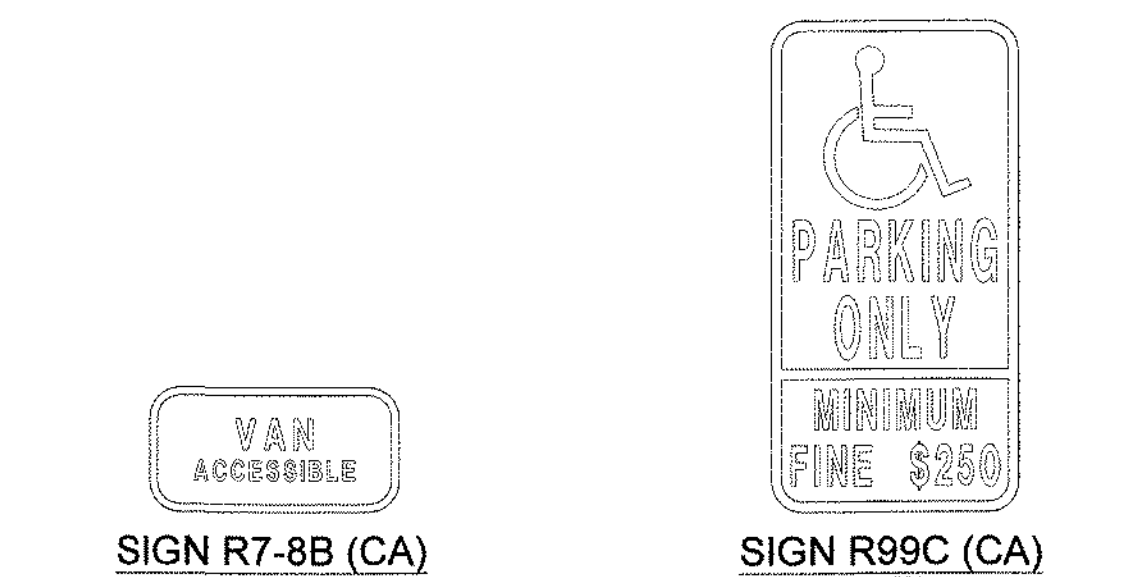
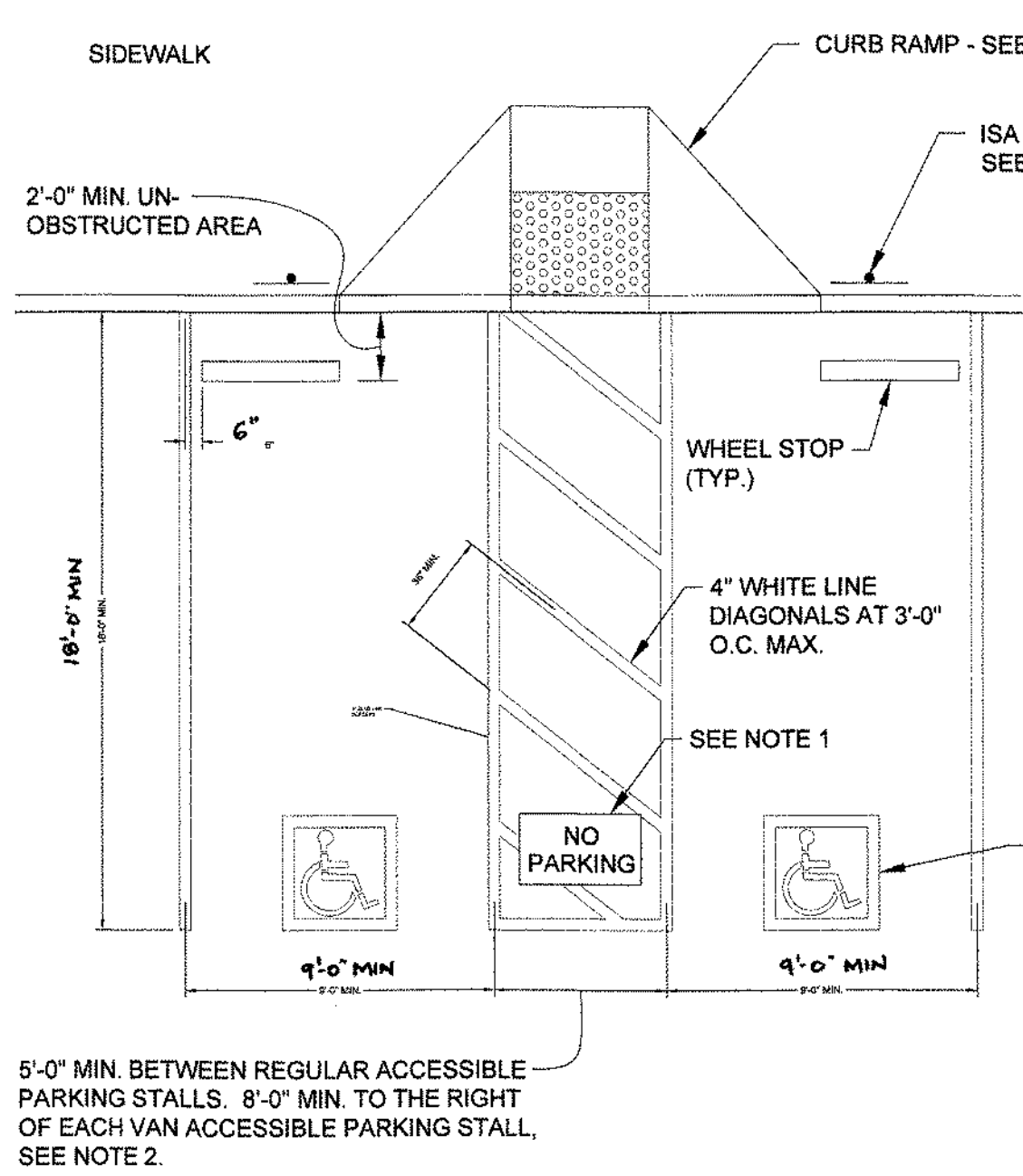
### 1 SIDEWALK UNDERDRAIN DETAIL

SCALE: N.T.S.



### 8 DOUBLE ACCESSIBLE PARKING STALL

SCALE: 1" = 5'



SIGN R7-8B (CA) (NTS)

SIGN R99C (CA) (NTS)

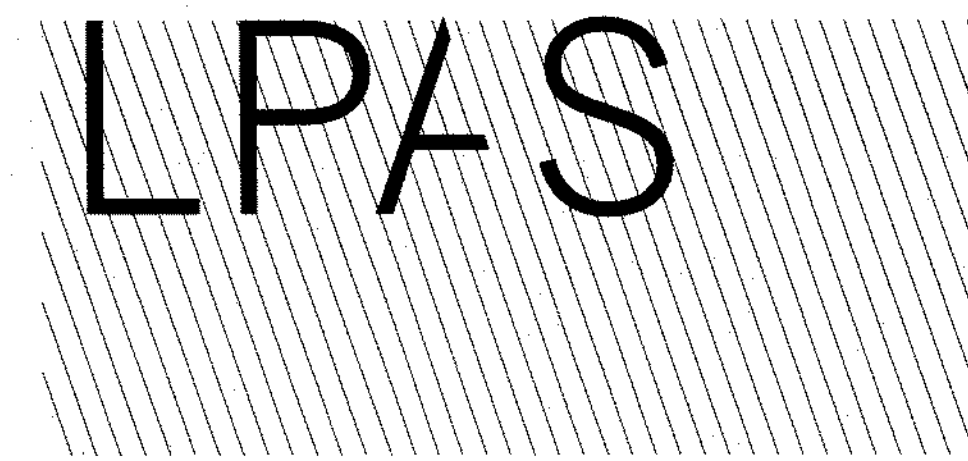
SIGN R100B (CA) (NTS)

SIGN INSTALLATION DETAIL (NTS)

### 8 DOUBLE ACCESSIBLE PARKING STALL

SCALE: 1" = 5'





2484 Natomas Park Drive Suite 100 Sacramento CA 95833  
916 443 0335 lpasdesign.com Architecture + Design

# COLLEGE OF MARIN INDIAN VALLEY CAMPUS

## ORGANIC FARM PARKING LOT IMPROVEMENTS

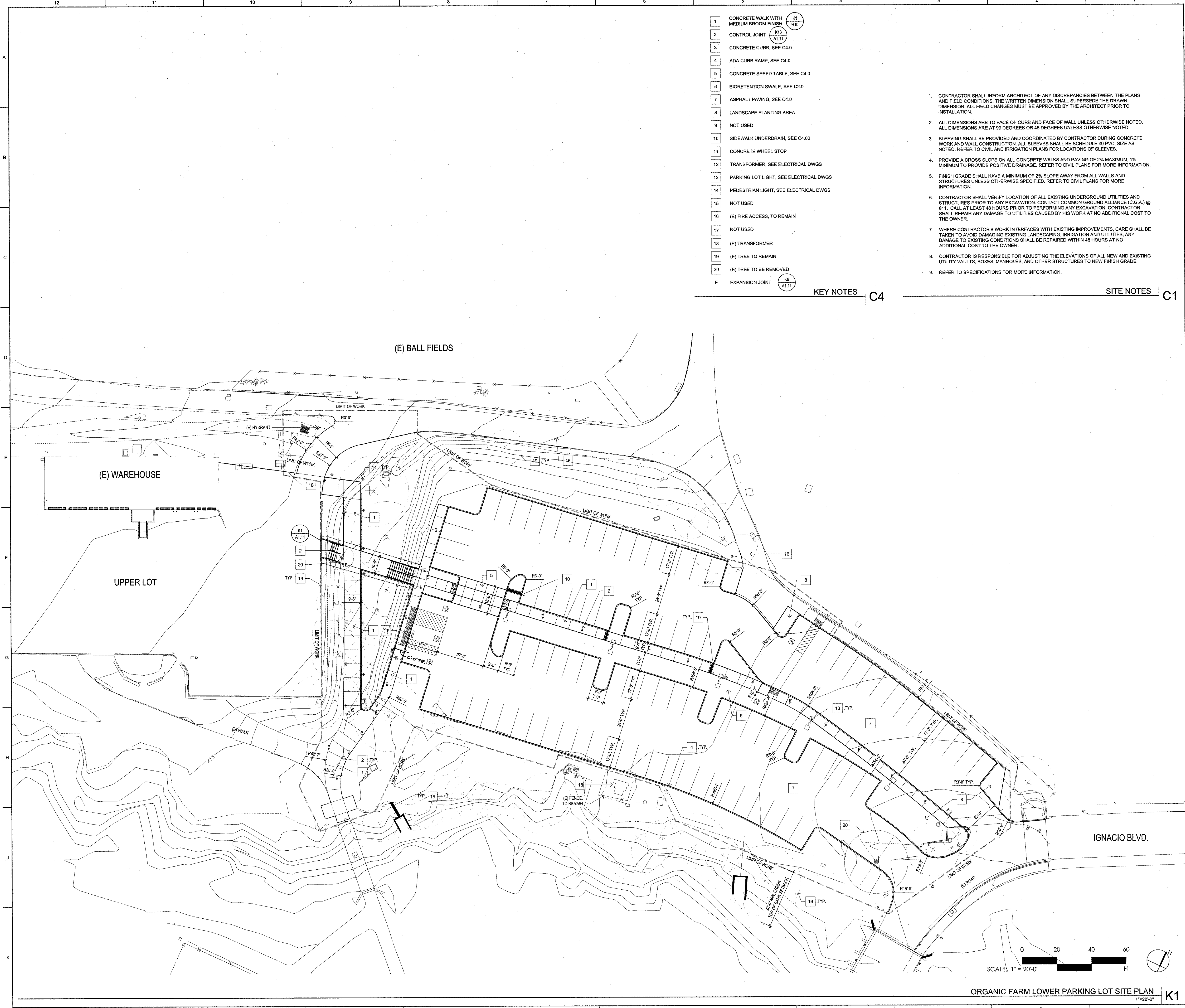
MARIN, CA

- 1 CONCRETE WALK WITH MEDIUM BROOM FINISH (K1 A1.11)
- 2 CONTROL JOINT (K10 A1.11)
- 3 CONCRETE CURB, SEE C4.0
- 4 ADA CURB RAMP, SEE C4.0
- 5 CONCRETE SPEED TABLE, SEE C4.0
- 6 BIORETENTION SWALE, SEE C2.0
- 7 ASPHALT PAVING, SEE C4.0
- 8 LANDSCAPE PLANTING AREA
- 9 NOT USED
- 10 SIDEWALK UNDERDRAIN, SEE C4.00
- 11 CONCRETE WHEEL STOP
- 12 TRANSFORMER, SEE ELECTRICAL DWGS
- 13 PARKING LOT LIGHT, SEE ELECTRICAL DWGS
- 14 PEDESTRIAN LIGHT, SEE ELECTRICAL DWGS
- 15 NOT USED
- 16 (E) FIRE ACCESS, TO REMAIN
- 17 NOT USED
- 18 (E) TRANSFORMER
- 19 (E) TREE TO REMAIN
- 20 (E) TREE TO BE REMOVED
- E EXPANSION JOINT (K8 A1.11)

1. CONTRACTOR SHALL INFORM ARCHITECT OF ANY DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS. THE WRITTEN DIMENSION SHALL SUPERSEDE THE DRAWN DIMENSION. ALL FIELD CHANGES MUST BE APPROVED BY THE ARCHITECT PRIOR TO INSTALLATION.
2. ALL DIMENSIONS ARE TO FACE OF CURB AND FACE OF WALL UNLESS OTHERWISE NOTED. ALL DIMENSIONS ARE AT 90 DEGREES OR 45 DEGREES UNLESS OTHERWISE NOTED.
3. SLEEVING SHALL BE PROVIDED AND COORDINATED BY CONTRACTOR DURING CONCRETE WORK AND WALL CONSTRUCTION. ALL SLEEVES SHALL BE SCHEDULE 40 PVC, SIZE AS NOTED. REFER TO CIVIL AND IRRIGATION PLANS FOR LOCATIONS OF SLEEVES.
4. PROVIDE A CROSS SLOPE ON ALL CONCRETE WALKS AND PAVING OF 2% MAXIMUM, 1% MINIMUM TO PROVIDE POSITIVE DRAINAGE. REFER TO CIVIL PLANS FOR MORE INFORMATION.
5. FINISH GRADE SHALL HAVE A MINIMUM OF 2% SLOPE AWAY FROM ALL WALLS AND STRUCTURES UNLESS OTHERWISE SPECIFIED. REFER TO CIVIL PLANS FOR MORE INFORMATION.
6. CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UNDERGROUND UTILITIES AND STRUCTURES PRIOR TO ANY EXCAVATION. CONTACT COMMON GROUND ALLIANCE (C.G.A.) @ 811. CALL AT LEAST 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION. CONTRACTOR SHALL REPAIR ANY DAMAGE TO UTILITIES CAUSED BY HIS WORK AT NO ADDITIONAL COST TO THE OWNER.
7. WHERE CONTRACTOR'S WORK INTERFACES WITH EXISTING IMPROVEMENTS, CARE SHALL BE TAKEN TO AVOID DAMAGING EXISTING LANDSCAPING, IRRIGATION AND UTILITIES. ANY DAMAGE TO EXISTING CONDITIONS SHALL BE REPAIRED WITHIN 48 HOURS AT NO ADDITIONAL COST TO THE OWNER.
8. CONTRACTOR IS RESPONSIBLE FOR ADJUSTING THE ELEVATIONS OF ALL NEW AND EXISTING UTILITY VAULTS, BOXES, MANHOLES, AND OTHER STRUCTURES TO NEW FINISH GRADE.
9. REFER TO SPECIFICATIONS FOR MORE INFORMATION.

KEY NOTES C4

SITE NOTES C1



ARCHITECT'S STAMP

APPROVAL

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### SITE PLAN

PROJECT NO: 1102-0005  
DATE: 05.30.17

SHEET NO:

# A1.00

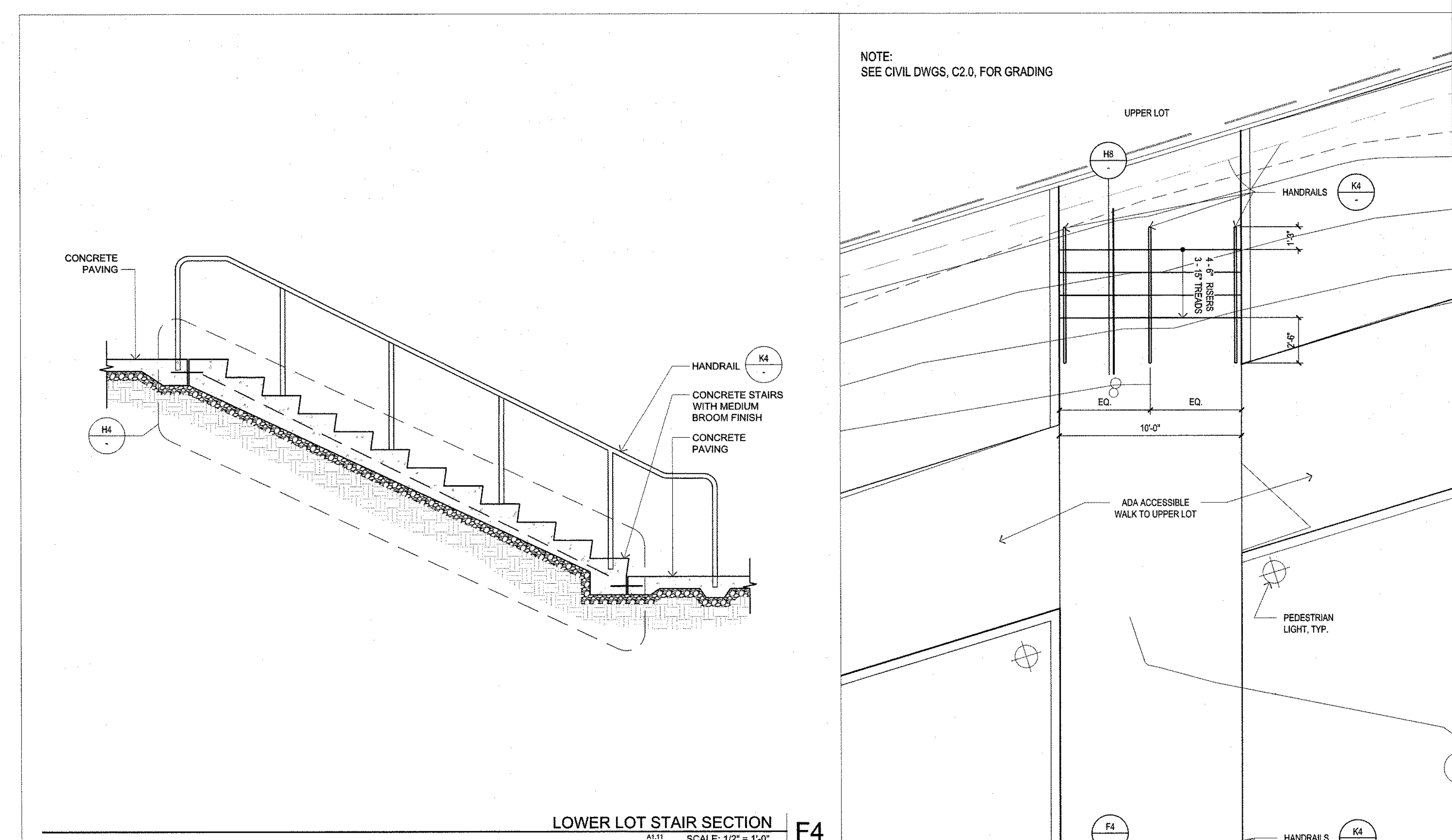
SCALE: 1" = 20'-0"

ORGANIC FARM LOWER PARKING LOT SITE PLAN  
1"=20'-0" K1

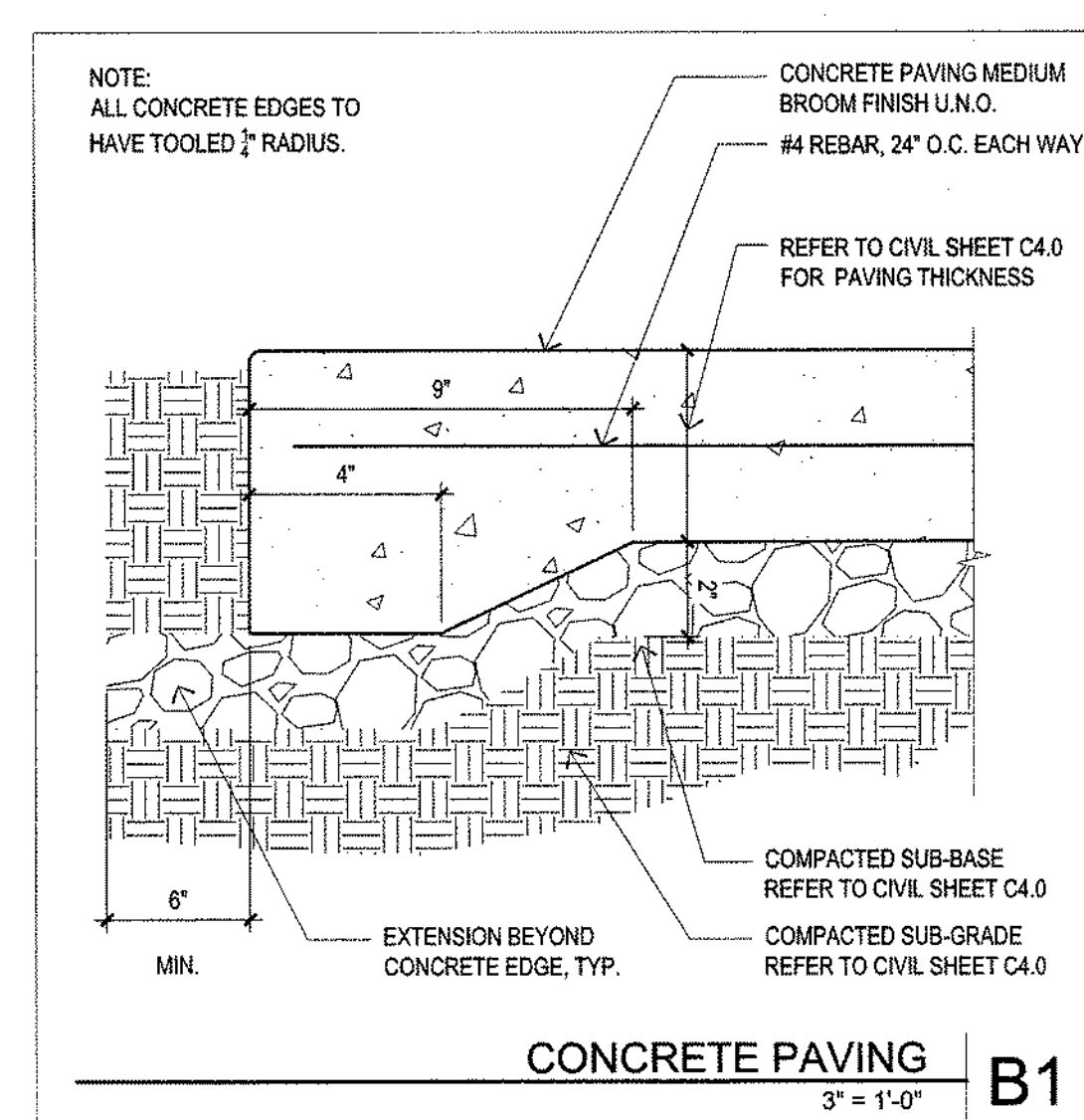
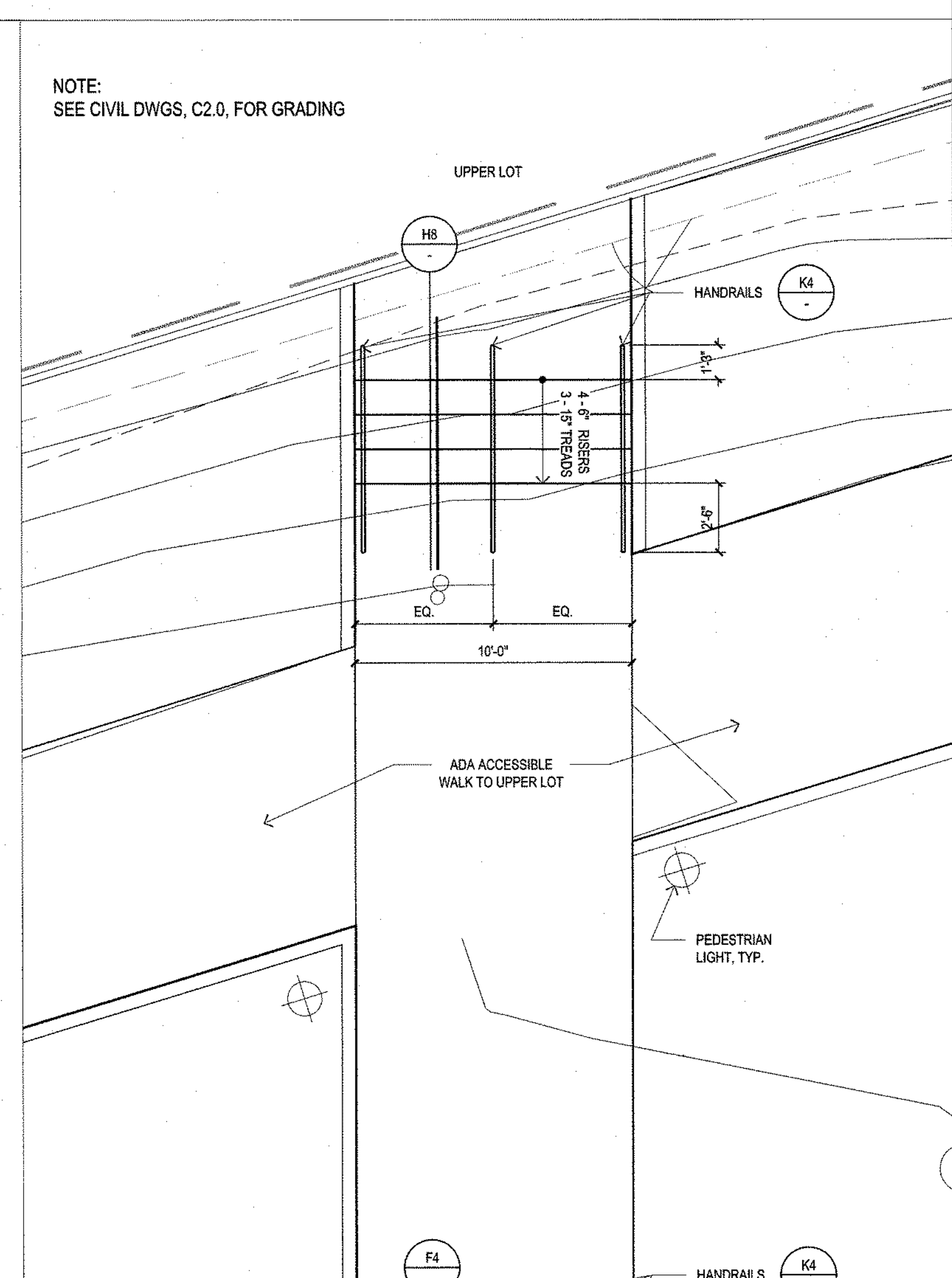


## COLLEGE OF MARIN INDIAN VALLEY CAMPUS

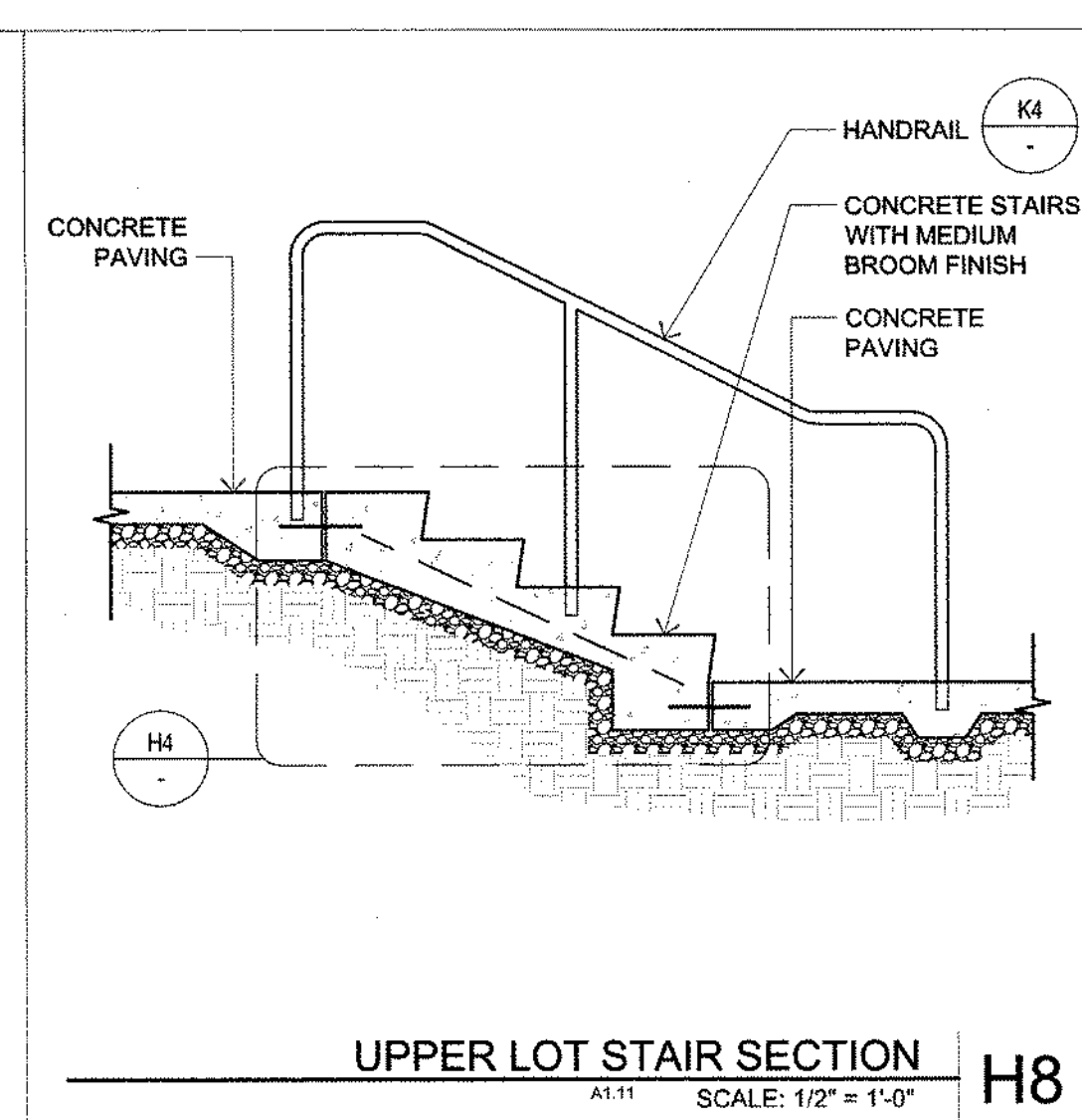
ORGANIC FARM  
PARKING LOT IMPROVEMENTS  
MARIN, CA



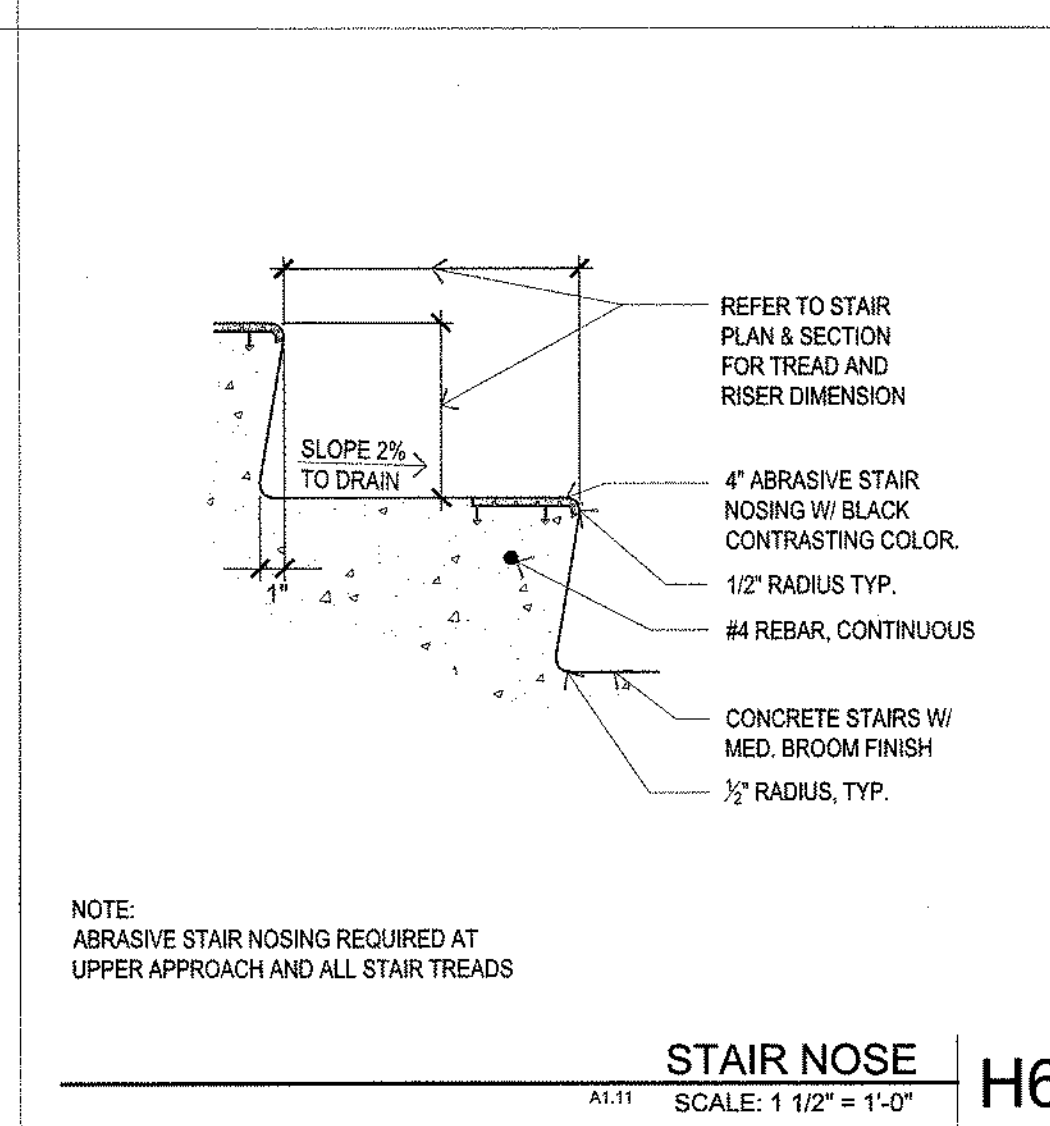
LOWER LOT STAIR SECTION F4  
SCALE: 1/2" = 1'-0"



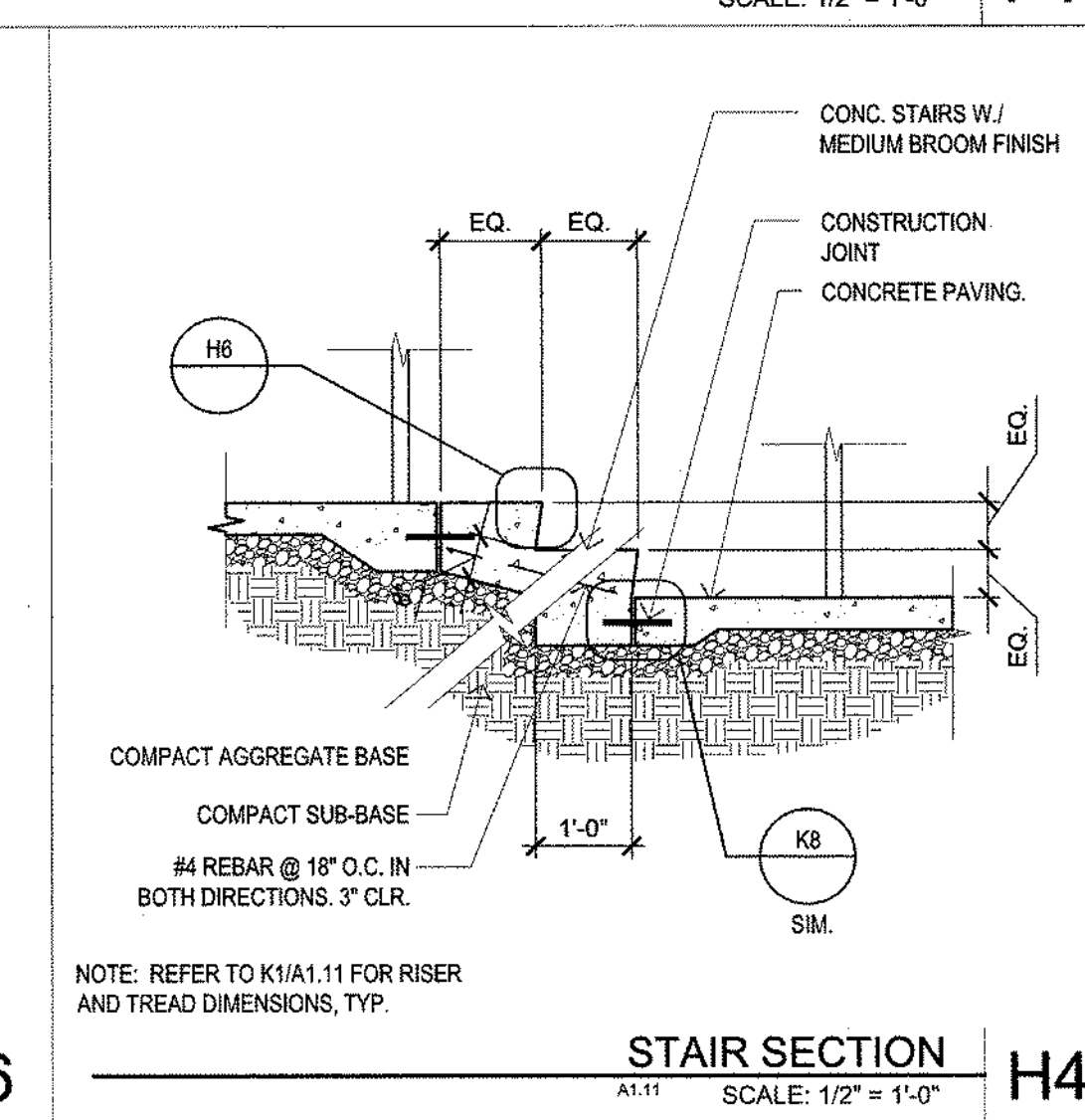
CONCRETE PAVING B1  
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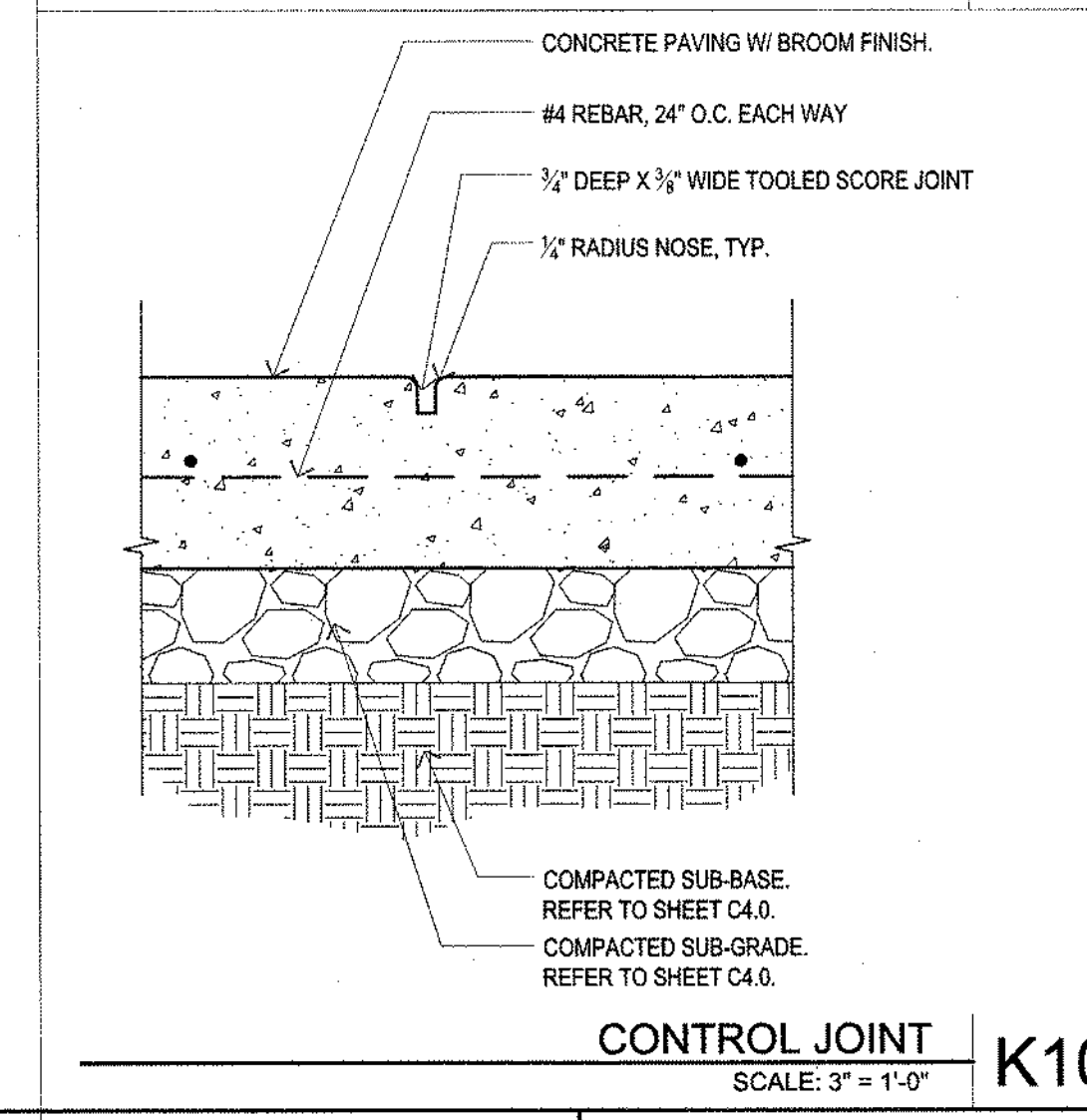
UPPER LOT STAIR SECTION H8  
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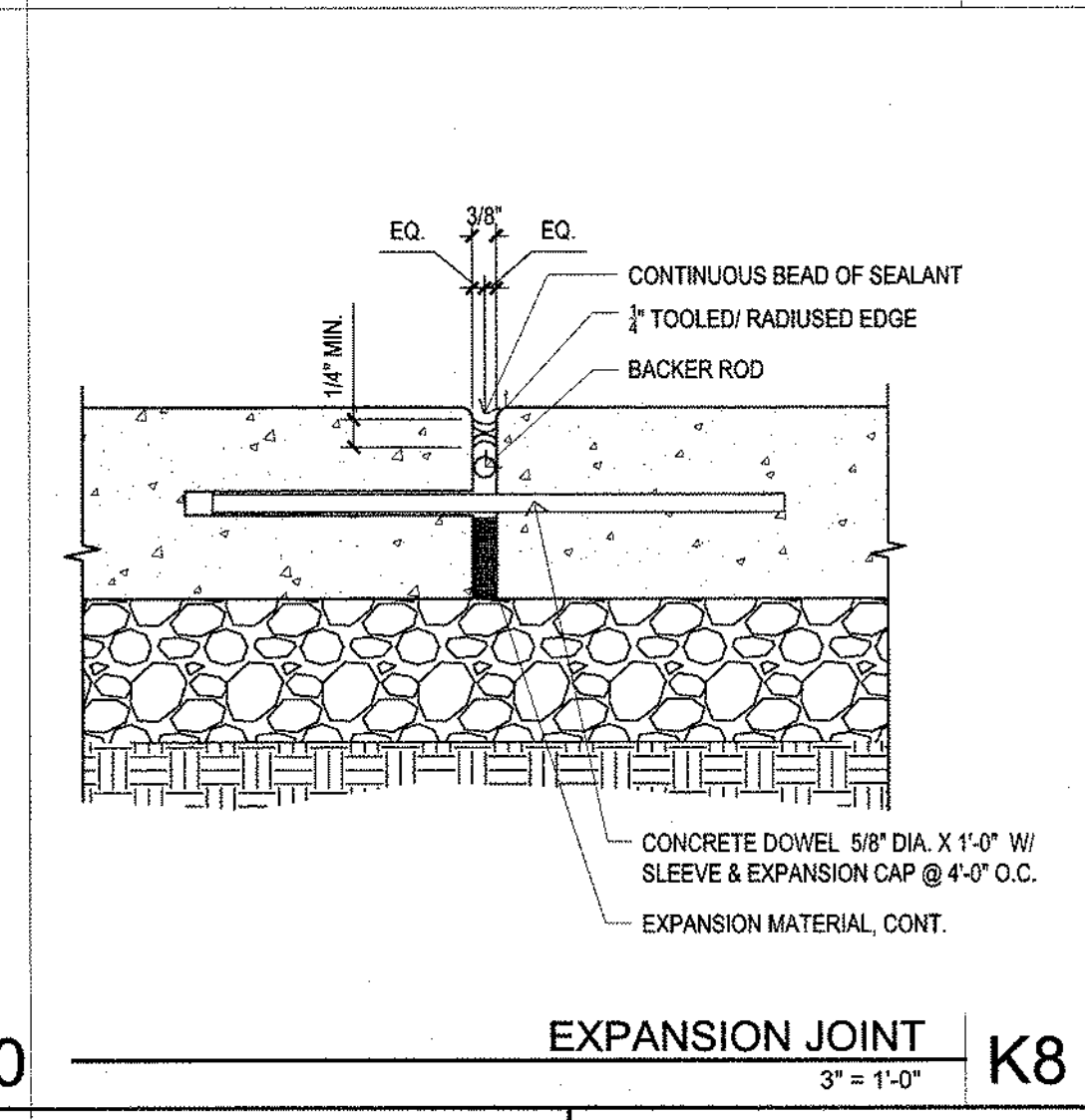
STAIR NOSE H6  
SCALE: 1/2" = 1'-0"



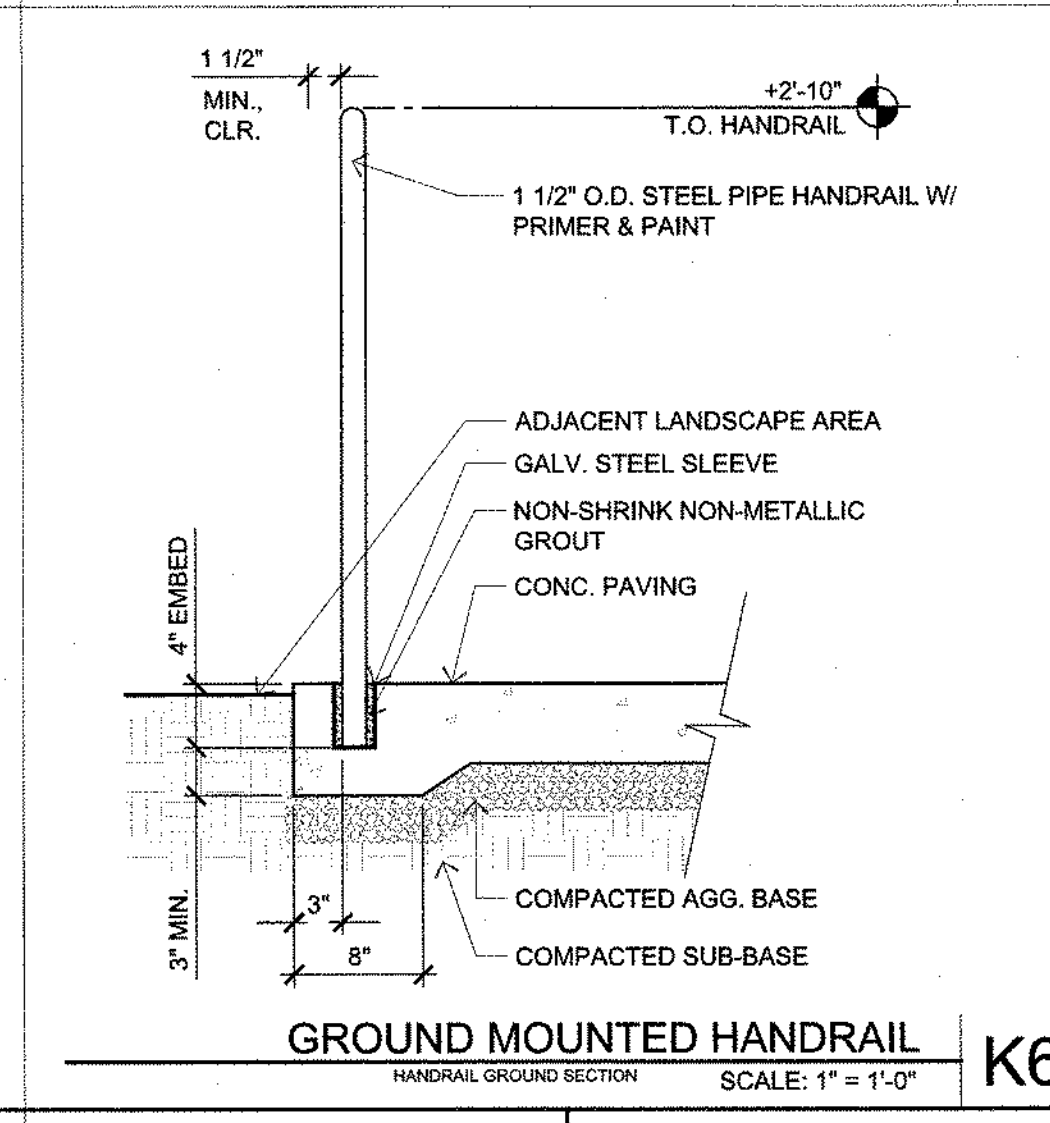
STAIR SECTION H4  
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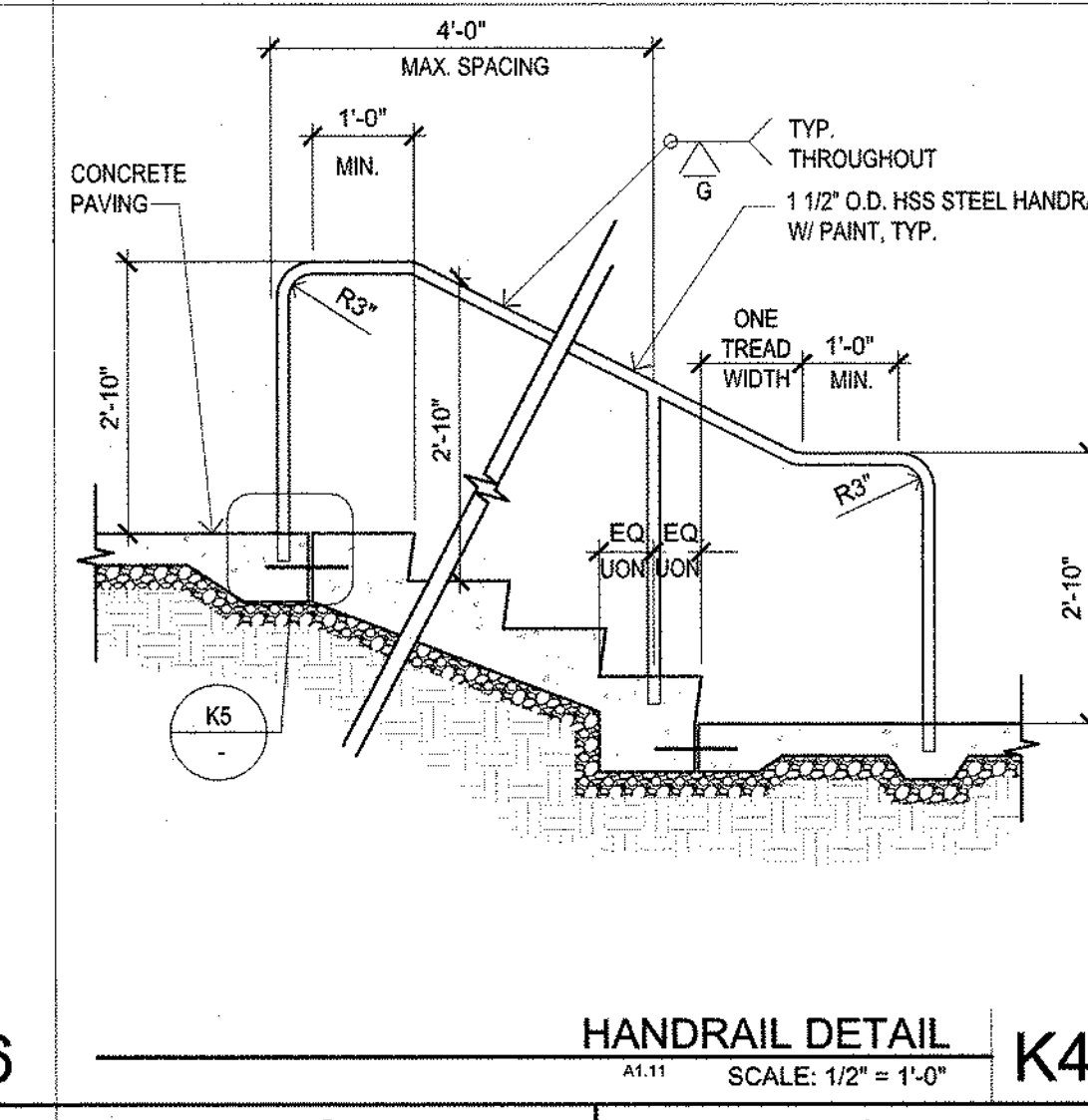
CONTROL JOINT K10  
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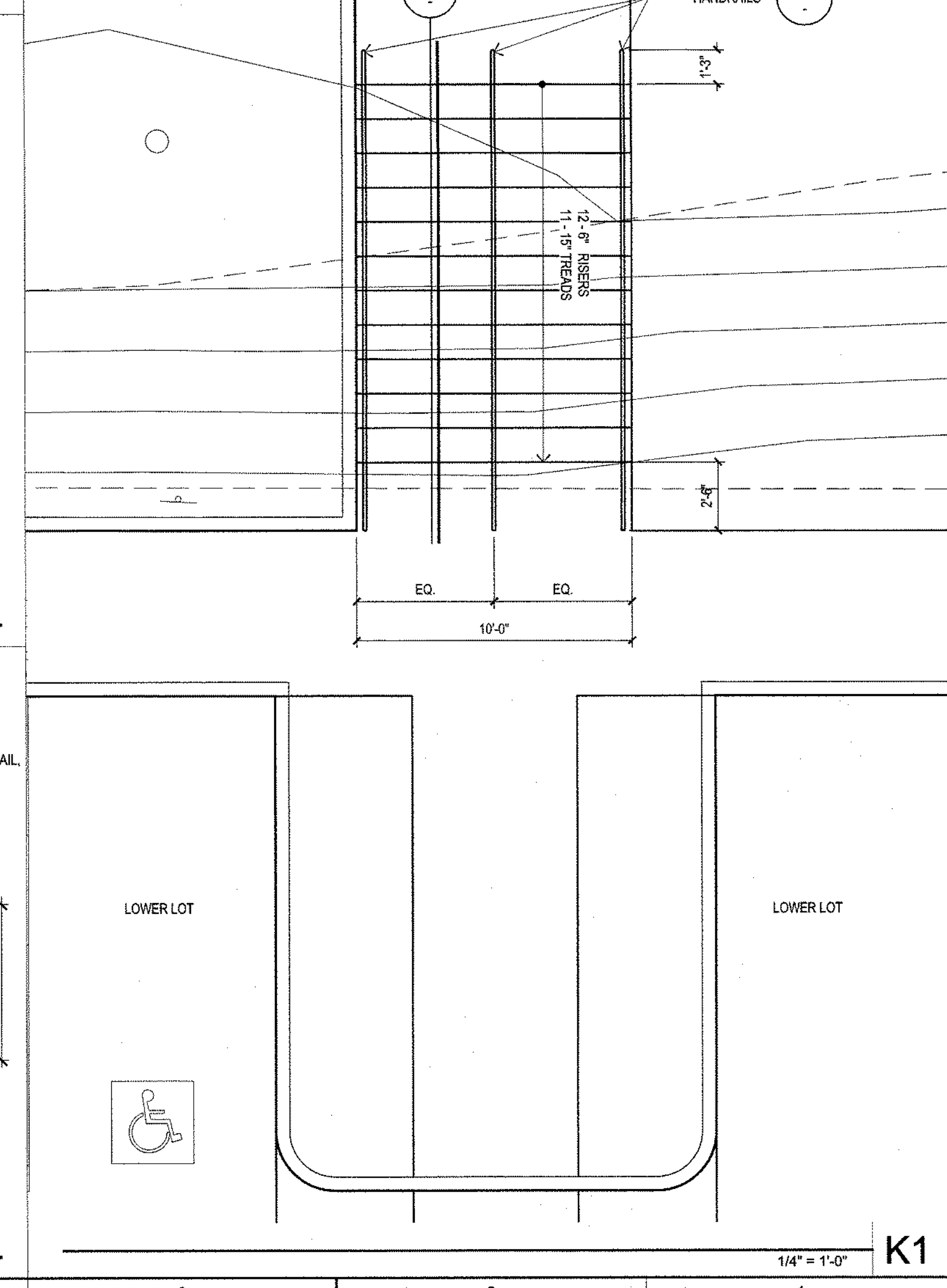
EXPANSION JOINT K8  
SCALE: 3" = 1'-0"



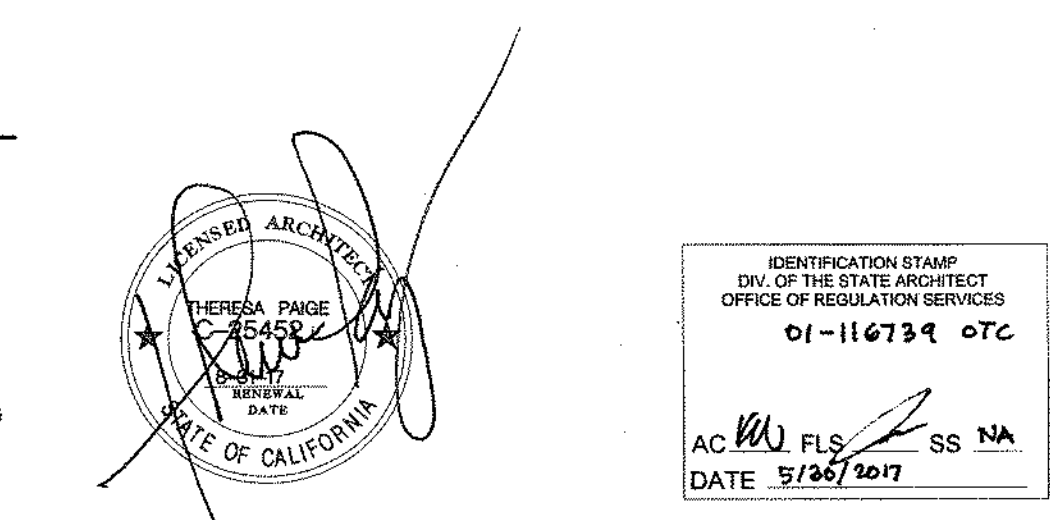
GROUND MOUNTED HANDRAIL K6  
SCALE: 1" = 1'-0"



HANDRAIL DETAIL K4  
SCALE: 1/2" = 1'-0"



SCALE: 1/4" = 1'-0"



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CONSULTANT

## SITE DETAILS

PROJECT NO: 1102-0005  
DATE: 05.30.17

SHEET NO:

# A1.11



## COLLEGE OF MARIN INDIAN VALLEY CAMPUS

### ORGANIC FARM PARKING LOT IMPROVEMENTS

MARIN, CA

## SYMBOLS LIST

SOME OF THESE SYMBOLS SHOWN MAY NOT BE USED ON THIS PROJECT

### POWER DISTRIBUTION

- SWITCHBOARD, DISTRIBUTION BOARD, SUBSTATION OR MOTOR CONTROL CENTER, FLOOR MOUNTED.
- PANELBOARD, 277/480V, SURFACE MOUNTED ON WALL.
- PANELBOARD, 277/480V, FLUSH MOUNTED IN WALL.
- PANELBOARD, 120/208V, SURFACE MOUNTED ON WALL.
- PANELBOARD, 120/208V, FLUSH MOUNTED IN WALL.
- DRY-TYPE STEP-DOWN TRANSFORMER, FLOOR MOUNTED 380,440/120/208V, UON.
- ELECTRIC MOTOR, N.E.C. MAKE POWER CONNECTIONS ONLY AS NOTED ON PLANS.
- INDOOR EXHAUST FAN MOTOR, SINGLE PHASE, MAKE POWER CONNECTIONS TO INCLUDE JUNCTION BOX MOUNTED MANUAL MOTOR STARTER AND DISCONNECT ADJACENT TO FAN WITH 2 #12 CONDUCTORS PLUS GROUND IN 1/2" FLEXIBLE CONDUIT BETWEEN STARTER AND MOTOR.
- INDOOR FAN POWERED VAV BOX MOTOR, SINGLE PHASE, MOUNTED FROM STRUCTURE ABOVE, N.E.C. MAKE POWER CONNECTIONS TO INCLUDE JUNCTION BOX MOUNTED MANUAL MOTOR STARTER AND DISCONNECT ADJACENT TO VAV BOX WITH 2 #12 CONDUCTORS PLUS GROUND IN 1/2" FLEXIBLE CONDUIT BETWEEN STARTER AND MOTOR.
- PULLBOX OR HANDHOLE, SIZE AND TYPE AS NOTED ON PLANS.
- SAFETY DISCONNECT SWITCH, 3 POLE, UON, ADJACENT NUMBER INDICATES FUSE SIZE WHEN APPLICABLE. LABELING CONVENTION AS FOLLOWS:  
A: 30A, NON-FUSED      BF: 60A, FUSED  
B: 60A, NON-FUSED      CF: 100A, FUSED  
C: 100A, NON-FUSED    DF: 200A, FUSED  
D: 200A, NON-FUSED    EF: 400A, FUSED  
E: 400A, NON-FUSED    FF: 600A, FUSED  
F: 600A, NON-FUSED    GF: 800A, FUSED  
G: 800A, NON-FUSED
- MAGNETIC MOTOR STARTER, ADJACENT NUMBER INDICATES NEMA SIZE OF STARTER.
- COMBINATION MAGNETIC MOTOR STARTER/SAFETY DISCONNECT SWITCH, ADJACENT NUMBER INDICATES NEMA SIZE OF STARTER.
- PACKAGE MOTOR CONTROLLER OR STARTER FURNISHED AND INSTALLED UNDER ANOTHER DIVISION WITH EQUIPMENT CONTROLLED. PROVIDE SINGLE-POINT POWER SERVICE CONNECTION UNDER THIS DIVISION AS NOTED ON PLANS.
- VARIABLE FREQUENCY DRIVE FURNISHED AND INSTALLED UNDER ANOTHER DIVISION. PROVIDE POWER SERVICE CONNECTION UNDER THIS DIVISION AS NOTED ON PLANS.
- VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT FURNISHED AND INSTALLED UNDER ANOTHER DIVISION. PROVIDE POWER SERVICE CONNECTION UNDER THIS DIVISION AS NOTED ON PLANS.
- DRIVEN GROUND ROD.
- DRIVEN GROUND ROD IN GROUND WELL WITH COVER.
- ELECTRICAL VEHICLE CHARGING STATION, WALL MOUNTED.
- ELECTRICAL VEHICLE CHARGING STATION, PEDESTAL MOUNTED.
- BRANCH CIRCUIT POWER DISTRIBUTION BOX OF MANUFACTURED WIRING SYSTEM WITH MODULAR CONNECTORS FOR INTERFACE TO BRANCH CIRCUIT MODULAR CABLE SETS AND CABLE OR CONDUIT HOMERUN, BOX MOUNTED FROM STRUCTURE ABOVE IN ACCESSIBLE CEILING SPACE. ADJACENT NUMBERS INDICATE CIRCUITS AVAILABLE AT BOX.
- DEVICE BRANCH CIRCUIT POWER DISTRIBUTION BOX FOR INTERFACE BETWEEN MULTI-CIRCUIT HOMERUN AND MC CABLE BRANCH CIRCUITING. MINIMUM BOX SIZE IS 10"x10"x4" DEEP. BOX MOUNTED FROM STRUCTURE ABOVE IN ACCESSIBLE CEILING SPACE. ADJACENT NUMBERS INDICATE CIRCUITS AVAILABLE AT BOX.
- INDICATES CABLE TERMINATION LUGS AT EQUIPMENT BUS.
- BOLTED PRESSURE OR HIGH PRESSURE CONTACT SWITCH.
- FUSED SWITCH.
- MEDIUM-VOLTAGE LOAD INTERRUPTER SWITCH.
- GROUP MOUNTED MOLDED CASE CIRCUIT BREAKER.
- INDIVIDUALLY FIXED MOUNTED INSULATED-CASE OR POWER CIRCUIT BREAKER.
- INDIVIDUALLY DRAW-OUT MOUNTED INSULATED-CASE OR POWER CIRCUIT BREAKER.
- MEDIUM-VOLTAGE, INDIVIDUALLY DRAW-OUT MOUNTED VACUUM CIRCUIT BREAKER.
- INDICATES INTEGRAL GROUND FAULT RELAY WHEN ASSOCIATED WITH CIRCUIT BREAKER.
- INDICATES COMMUNICATION NETWORK WIRING WHEN ASSOCIATED WITH CIRCUIT BREAKER.
- INDICATES ELECTRICALLY OPERATED WHEN ASSOCIATED WITH CIRCUIT BREAKER.
- INDICATES SHUNT TRIP WHEN ASSOCIATED WITH OVERCURRENT PROTECTION DEVICES.
- INDICATES KIRK-KEY INTERLOCK WHEN ASSOCIATES WITH OVERCURRENT PROTECTION DEVICES. ADJACENT NUMBER CORRESPONDS WITH DEVICE INTERLOCK.
- GROUND FAULT RELAY WITH SHUNT TRIP.
- GROUND FAULT ALARM, NO SHUNT TRIP.
- UTILITY METER.
- TRANSFORMER.
- CONNECTION TO GROUND.
- CURRENT TRANSFORMERS.
- POTENTIAL TRANSFORMERS.
- AUTOMATIC OR MANUAL TRANSFER SWITCH.
- AUTOMATIC TRANSFER-BY-PASS ISOLATION SWITCH.
- EMERGENCY GENERATOR.
- BATTERIES.
- NEUTRAL SERVICE DISCONNECT LINK.
- SURGE PROTECTION DEVICE, 'SPD'.
- CONTROL CONTACTOR.
- NORMALLY OPEN CONTACT.
- NORMALLY CLOSED CONTACT.
- DIGITAL METERING UNIT.      WATT HOUR METER.
- GROUND BUS.      NEUTRAL BUS.

### WIRING DEVICES

- JUNCTION BOX, WALL MOUNTED, +18" UON.
- JUNCTION BOX, MOUNTED IN FLUSH FLOOR BOX.
- JUNCTION BOX, MOUNTED FLUSH IN CEILING.
- JUNCTION BOX, SURFACE OR PENDANT MOUNTED TO STRUCTURE IN ACCESSIBLE CEILING SPACE.
- JUNCTION BOX, MOUNTED ON CONDUIT STANCHION FLOOR PENETRATION, +12" UON.
- SINGLE-PLEX CONVENIENCE RECEPTACLE DEVICE, WALL MOUNTED, +18" UON.
- 'IG' DENOTES ISOLATED GROUND, DUPLEX CONVENIENCE RECEPTACLE DEVICE, WALL MOUNTED, +18" UON.
- DOUBLE DUPLEX CONVENIENCE RECEPTACLE DEVICE, WALL MOUNTED, +18" UON.
- DENOTES WALL MOUNTED OVER COUNTER, 6" ABOVE BACK SPLASH UON.
- 'G' DENOTES GROUND FAULT CURRENT INTERRUPTER (GFCI), 'A' DENOTES ARC FAULT CURRENT INTERRUPTER (AFCI).
- DUPLEX RECEPTACLE, WEATHER RESISTANT WITH GROUND FAULT CURRENT INTERRUPTER 'GFCI', WITH WEATHERPROOF COVER, WALL MOUNTED, +18" UON.
- SHADING DENOTES SPLIT WIRED DEVICE.
- SHADING DENOTES DEVICE CONNECTED TO EMERGENCY POWER CIRCUIT.
- SHADING DENOTES CONTROLLED RECEPTACLE.
- SHADING DENOTES SPECIALTY DEVICE, TYPE AS NOTED ON PLANS.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED IN FLUSH FLOOR BOX.
- DOUBLE DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED IN FLUSH FLOOR BOX.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED IN FIRE-RATED POKE-THRU FLOOR FITTING.
- DOUBLE DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED IN FIRE-RATED POKE-THRU FLOOR FITTING.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED FLUSH IN CEILING.
- DOUBLE DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED FLUSH IN CEILING.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED ON CONDUIT STANCHION FLOOR PENETRATION, +12" UON.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, MOUNTED IN FLOOR MONUMENT.
- COMBINATION POWER/TELECOMMUNICATION DEVICE, MOUNTED IN FLUSH FLOOR BOX. TYPE AS NOTED ON PLANS OR IN SPECIFICATIONS.
- DUPLEX CONVENIENCE RECEPTACLE DEVICE, CORD OR REEL HUNG FROM STRUCTURE ABOVE. TYPE AS NOTED ON PLANS.
- ELECTRIFIED FURNITURE PARTITION POWER FEED, WALL MOUNTED, +18" UON, CONSISTS OF 4 #11/8" X 2 X 2" 18" DEEP, JUNCTION BOX, SINGLE GANG RINGS, AND STAINLESS STEEL AND CABLE OR CONDUIT HOMERUN, BOX MOUNTED FROM STRUCTURE ABOVE IN ACCESSIBLE CEILING SPACE.
- ELECTRIFIED FURNITURE PARTITION COMBINATION POWER/TELECOMMUNICATION FEEDS, MOUNTED IN FLUSH FLOOR BOX WITH KO'S IN COVER TO ACCEPT FURNITURE WHIPS.
- ELECTRIFIED FURNITURE PARTITION POWER FEED, MOUNTED IN FIRE-RATED POKE-THRU FLOOR FITTING WITH KO IN COVER TO ACCEPT FURNITURE WHIP.
- POWER/TELECOMMUNICATION POLE, MOUNTED TO EXTEND FROM FLOOR TO CEILING, TYPE AS NOTED ON PLANS.
- SINGLE-POLE, SINGLE-THROW SWITCH, WALL MOUNTED, +42" UON.
- THREE-WAY SWITCH, WALL MOUNTED, +42" UON.
- FOUR-WAY SWITCH, WALL MOUNTED, +42" UON.
- KEY-OPERATED, SINGLE-POLE, SINGLE-THROW SWITCH, WALL MOUNTED, +42" UON.
- PILOT LIGHT, SINGLE-POLE, SINGLE-THROW SWITCH, WALL MOUNTED, +42" UON.
- MANUAL MOTOR STARTER SWITCH WITH THERMAL OVERLOAD ELEMENT, MOUNTED ADJACENT TO MOTOR.
- MANUAL MOTOR STARTER/DISCONNECT SWITCH, MOUNTED ADJACENT TO MOTOR.
- SWITCH FURNISHED UNDER ANOTHER DIVISION, BUT INSTALLED AND WIRED UNDER THIS DIVISION, WALL MOUNTED, +42" UON.
- WALL BOX DIMMER SWITCH, +42" UON, SIZED PER CONNECTED LOAD ON PLANS AND FURNISHED FOR LAMP SOURCE SERVICE. PROVIDED FOR DERATING WHEN INSTALLED GANGED LOCATIONS.
- SINGLE-POLE, TIMER CONTROLLED SWITCH, WALL MOUNTED, +42" UON.
- SINGLE-POLE, SINGLE-THROW, EXPLOSION PROOF SWITCH, WALL MOUNTED, +42" UON.
- LINE-VOLTAGE MULTIPLE GANG SWITCHING STATION, WALL MOUNTED, +42" UON. REFER TO PLANS FOR DEVICE QUANTITIES AND TYPES.
- LOW-VOLTAGE LIGHTING CONTROL SWITCHING STATION, WALL MOUNTED, +42" UON. REFER TO PLANS AND SCHEDULES FOR DEVICE QUANTITIES AND RELAYS CONTROLLED.
- LIGHTING CONTROL OCCUPANCY SENSOR WITH DUAL LEVEL SWITCHING, WALL MOUNTED, +42" UON.
- LIGHTING CONTROL OCCUPANCY SENSOR WITH SINGLE LEVEL SWITCHING, WALL MOUNTED, +42" UON.
- LIGHTING CONTROL OCCUPANCY SENSOR, CEILING MOUNTED FOR AREA COVERAGE.
- PRESET SCENE CONTROL LIGHTING STATION WITH DIMMING CAPABILITIES, WALL MOUNTED, +42" UON. REFER TO PLANS AND SCHEDULES FOR CONTROL.
- EGRESS LIGHTING TRANSFER DEVICE.
- CONTROL STATION, WALL MOUNTED, +42" UON.
- PHOTOELECTRIC CELL.
- DAYLIGHT SENSOR.

### RACEWAYS

- CONDUIT RUN EXPOSED ON WALL OR CEILING.
- CONDUIT RUN CONCEALED IN SLAB, UNDER SLAB OR UNDERGROUND.
- CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING.
- CONDUIT HOMERUN, CONTINUOUS RUN TO PANEL OR EQUIPMENT CABINET.
- FLEXIBLE METALLIC CONDUIT.
- CONDUIT TURNED UP.
- CONDUIT TURNED DOWN.
- CONDUIT CAPPED OR STUBBED WITH INSULATED BUSHINGS.
- CROSSMARKS ON BRANCH CIRCUIT CONDUIT RUNS INDICATE THE QUANTITY OF CONDUCTORS AS FOLLOWS (GROUND CONDUCTORS ARE NOT NOTED, BUT SHOULD BE INCLUDED IN EVERY CONDUIT WITH POWER CONDUCTORS):  
1. NO CROSSMARKS INDICATES TWO #12 AWG CONDUCTORS, UON.  
2. THREE TO SIX CROSSMARKS INDICATES THE QUANTITY OF #12 AWG CONDUCTORS, UON.  
3. SEVEN OR MORE CROSSMARKS INDICATES THE QUANTITY OF #10 AWG CONDUCTORS, UON.
- MULTI-OUTLET TWO PIECE SURFACE RACEWAY; TYPE, DEVICE SPACING AND MOUNTING AS NOTED ON PLANS.
- TWO PIECE SURFACE METAL RACEWAY, MOUNTED AS NOTED IN PLANS.
- CABLE TRAY, CABLE RUNWAY OR LADDER RACK SUSPENDED FROM STRUCTURE ABOVE. REFER TO PLANS FOR SIZE AND MOUNTING.

### CONVENTIONS

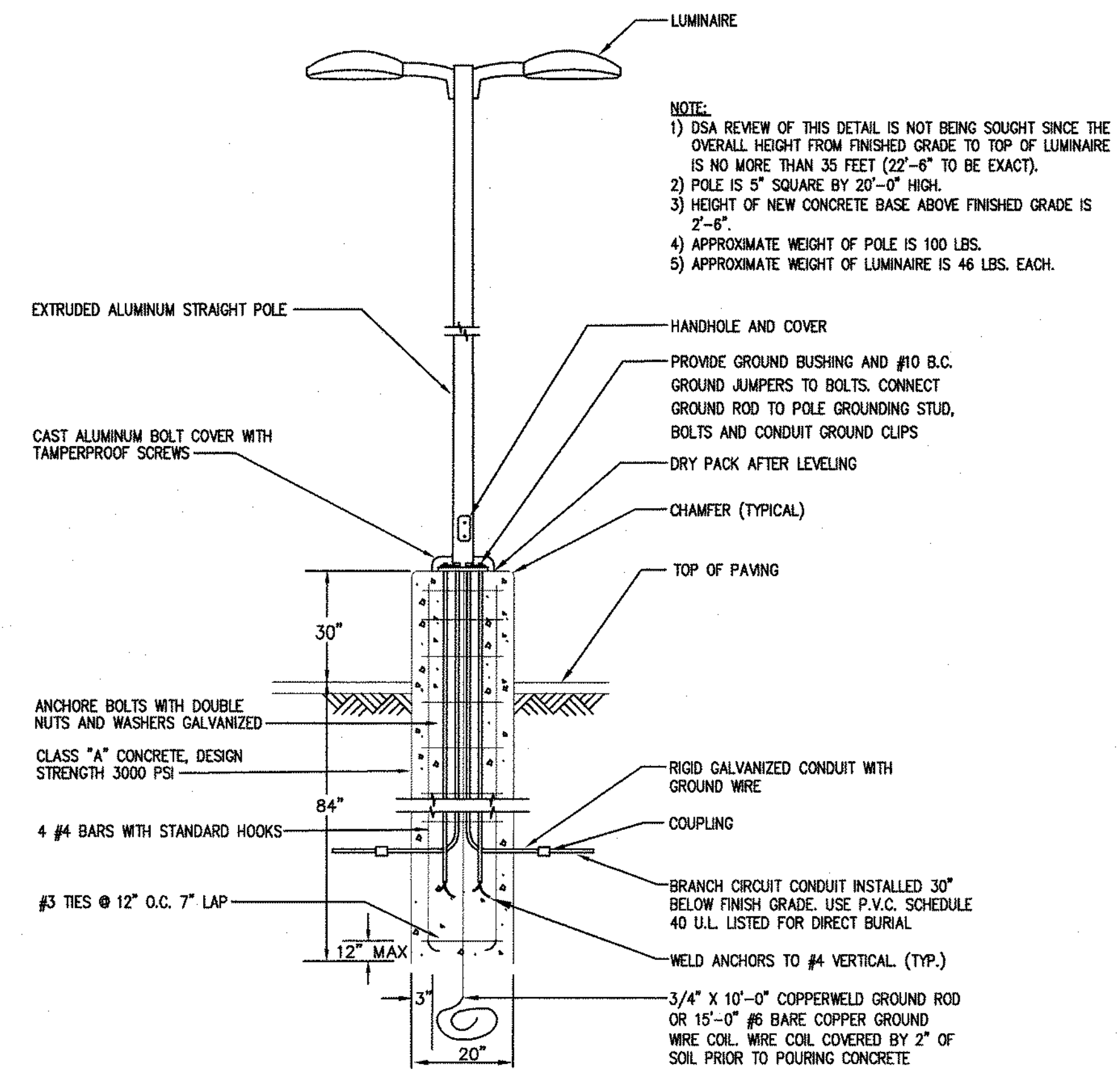
- NUMBERED NOTE, APPLIES TO ALL DRAWINGS.
- NUMBERED SHEET NOTE, APPLIES TO DRAWING CONTAINING NOTES ONLY.
- OVERCURRENT PROTECTIVE DEVICE SPACE IDENTIFICATION TAG, REFERS TO LOCATION OF PROTECTIVE OR CONTROL DEVICE WITHIN SWITCHBOARDS, DISTRIBUTION BOARDS, MOTOR CONTROL CENTERS, ETC.
- EQUIPMENT IDENTIFICATION TAG: ITEM FURNISHED AND INSTALLED UNDER ANOTHER SECTION AND WIRED UNDER THIS SECTION.
- CABLE AND/OR RACEWAY TAG, FUNCTION AS NOTED BELOW:  
P = POWER    T = TELEPHONE    C = COMMUNICATION
- FEEDER SIZE, REFER TO FEEDER SCHEDULE.
- DETAIL REFERENCE:  
SHEET NUMBER  
DETAIL DESIGNATION
- FIXTURE IDENTIFICATION TAG:  
FIXTURE TYPE  
QUANTITY

### LIGHTING

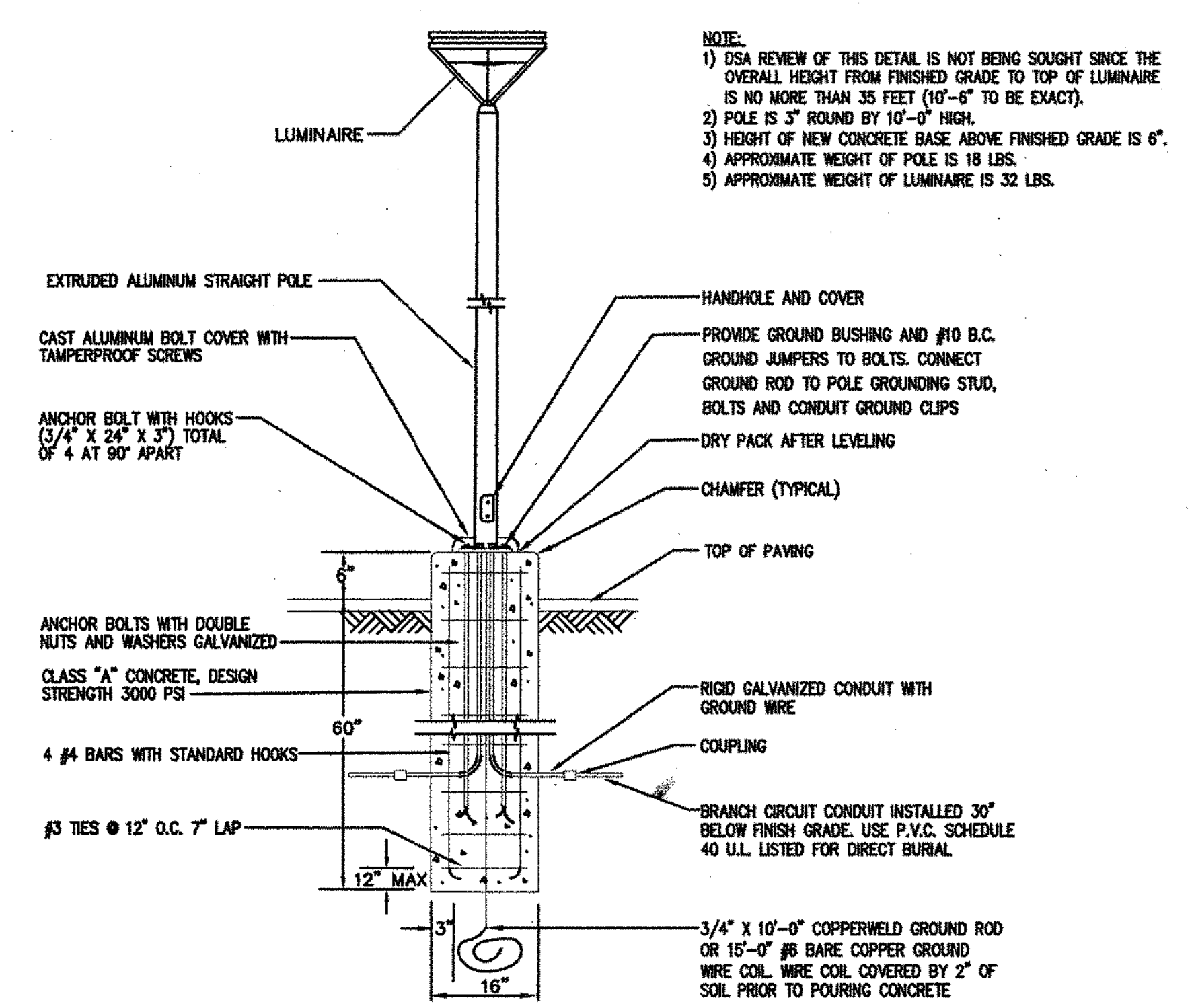
- LIGHT FIXTURE, RECESSED IN CEILING.
- LIGHT FIXTURE, SURFACE OR PENDANT MOUNTED.
- LIGHT FIXTURE, WALL MOUNTED.
- STRIP LIGHT FIXTURE, SURFACE OR PENDANT MOUNTED.
- STRIP LIGHT FIXTURE, SURFACE MOUNTED IN ARCHITECTURAL CEILING COVE.
- STRIP LIGHT FIXTURE, SURFACE MOUNTED VERTICALLY ON WALL OR IN COVE.
- DOWNLIGHT FIXTURE, RECESSED IN CEILING.
- DOWNLIGHT/INDUSTRIAL FIXTURE, SURFACE OR PENDANT MOUNTED.
- SINGLE DIRECTIONAL, WALLWASH LIGHT FIXTURE, RECESSED IN CEILING.
- DUAL DIRECTIONAL, WALLWASH LIGHT FIXTURE, RECESSED IN CEILING.
- SINGLE DIRECTIONAL, WALLWASH LIGHT FIXTURE, SURFACE OR PENDANT MOUNTED.
- DUAL DIRECTIONAL, WALLWASH LIGHT FIXTURE, SURFACE OR PENDANT MOUNTED.
- ADJUSTABLE ACCENT LIGHT FIXTURE, RECESSED IN CEILING.
- ADJUSTABLE ACCENT LIGHT FIXTURE, SURFACE OR PENDANT MOUNTED.
- LINEAR WALLWASH LIGHT FIXTURE, RECESSED IN CEILING.
- LINEAR WALLWASH LIGHT FIXTURE, SURFACE OR PENDANT MOUNTED.
- LINEAR, MULT-HEAD, ADJUSTABLE ACCENT LIGHT FIXTURES, RECESSED IN CEILING.
- SCENCE LIGHT FIXTURE, WALL MOUNTED.
- DECORATIVE CHANDELIER OR BOWL TYPE FIXTURE, PENDANT MOUNTED.
- LINEAR TRACK SYSTEM WITH PLUG-IN ADJUSTABLE LIGHT FIXTURE HEADS. TRACK SHALL BE EITHER RECESSED, SURFACE OR PENDANT MOUNTED TO CEILING AS NOTED IN FIXTURE SCHEDULE.
- EXIT SIGN LIGHT FIXTURE, CEILING OR WALL MOUNTED WITH DIRECTIONAL ARROWS AS NOTED ON PLANS. WORD 'EXIT' TO BE LOCATED IN SHADED FACE(S).
- COMBO EXIT SIGN AND EGRESS LIGHTING FIXTURE, CEILING OR WALL MOUNTED WITH ARROWS AS NOTED ON PLANS OR IN FIXTURE SCHEDULE.
- EMERGENCY SELF-POWERED BATTERY PACK WITH LIGHT FIXTURE HEADS AS NOTED ON PLANS OR IN FIXTURE SCHEDULE.
- HALF SHADING OF ANY FIXTURE INDICATES LIFE SAFETY/EGRESS LIGHTING.
- FULL SHADING OF ANY FIXTURE INDICATES STANDBY/CRITICAL LIGHTING.

### ABBREVIATIONS

A	AMPERES	LSCP	LIFE SAFETY CONTROL PANEL
AFC	ABOVE FINISHED CEILING	LCP	LIGHTING CONTROL PANEL
AFI	ARC FAULT CIRCUIT INTERRUPTER	MBGB	MAIN BUILDING GROUND BUS
AF	AMPERE OVERCURRENT FRAME SIZE (WHEN APPLIED TO CIRCUIT BREAKERS) OR AMPERE FUSE SIZE (WHEN APPLIED TO FUSES)	MCB	MAIN CIRCUIT BREAKER
AFB	ABOVE FINISHED FLOOR	MCC	MOTOR CONTROL CENTER
AIC	ASYMMETRIC INTERRUPTING CURRENT	MLO	MAIN LUGS ONLY
AL	ALUMINUM	MLT	EMPTY
AT	AMPERE OVERCURRENT TRIP (WHEN APPLIED TO CIRCUIT BREAKERS)	MTC	EMPTY CONDUIT
ATS	AUTOMATIC TRANSFER SWITCH	MTGB	MAIN TELECOM GROUND BUS
BAS	BUILDING AUTOMATION SYSTEM	MWS	MANUAL TRANSFER SWITCH
BFC	BELOW FINISHED CEILING	MTG	MICROWAVE
BOC	BACK OF CURB	(N)	NEW
BPS	BOLTED PRESSURE CONTACT SWITCH	NC	NORMALLY CLOSED
C	CONDUIT	NF	NON-FUSED
CCTV	CLOSED CIRCUIT TELEVISION	NI	NOT IN ELECTRICAL CONTRACT
CL	CURRENT LIMITING CIRCUIT BREAKER OR FUSE	NO	NORMALLY OPEN
CP	CIRCULATION PUMP	NTS	NOT TO SCALE
CKT	CIRCUIT	OC	ON CENTER
CT	CURRENT TRANSFORMER	OCI	OWNER FURNISHED CONTRACTOR INSTALLED
CU	COPPER	PDU	POWER DISTRIBUTION UNIT
DF	DRINKING FOUNTAIN	PV	POST INDICATING VALVE
DW	DISH WASHER	PNL	PANEL
(E)	EXISTING TO REMAIN	PT	POTENTIAL TRANSFORMER
EC	ELECTRICAL CONTRACTOR	PVC	POLYVINYL CHLORIDE
EF	EXHAUST FAN	RF	REFRIGERATOR
EP	EXPLOSION PROOF	(R)	EXISTING TO BE REMOVED
EPO	EMERGENCY POWER OFF	(RL)	RELOCATED
EMCS	ENERGY MANAGEMENT CONTROL SYSTEM	(RR)	REMOVE AND RELOCATE
EMT	ELECTRICAL METALLIC TUBING	RSC	RIGID STEEL CONDUIT
ETD	EMERGENCY TRANSFER DEVICE	SAD	SEE ARCHITECTURAL DRAWINGS
EVSE	ELECTRIC VEHICLE SUPPLY EQUIPMENT	SPD	SURGE PROTECTION DEVICE
EVCS	ELECTRIC VEHICLE CHARGING STATION	TC	TIME CLOCK
EW	ELECTRIC WATER HEATER	TGB	TELECOMMUNICATIONS GROUND BUS
F	FUSED	TP	TWISTED-PAIR
(F)	FUTURE	TX	TRANSFORMER
FACP	FIRE ALARM CONTROL PANEL	TYP	TYPICAL
FAJB	FIRE ALARM JUNCTION BOX	UON	UNLESS OTHERWISE NOTED
FFCP	FIREMAN'S FAN CONTROL PANEL	UPS	UNINTERRUPTIBLE POWER SUPPLY
FLA	FULL LOAD AMPERES	URAP	UPS REMOTE ANNUNCIATOR PANEL
FMC	FLEXIBLE METAL CONDUIT	UR	UNDERCOUNTER REFRIGERATOR
FSD	FIRE/SMOKE DAMPER	V	VOLTS
FSEC	FOOD SERVICE EQUIPMENT CONTRACTOR	VVA	VOLTS-AMPS
FRAP	FIREMAN'S REMOTE ANNUNCIATOR PANEL	VAV	VARIABLE AIR VOLUME
G	GROUND	VFD	VARIABLE FREQUENCY DRIVE
GB	GROUND BUS	VM	VENDING MACHINE
GD	GARBAGE DISPOSAL	W	WATTS
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	WAP	WIRELESS ACCESS POINT
GND	GROUND	WH	WATER HEATER
GRAP	GENERATOR REMOTE ANNUNCIATOR PANEL	WP	WEATHERPROOF
1P	1 POLE	2SP	TWO SPEED
2P	2 POLE	1P	1 PHASE
3P	3 POLE	3P	3 PHASE
3W	3 WIRE	1P	1 POLE
4W	4 WIRE	2P	2 POLE
		3P	3 POLE
		3W	3 WIRE
		4W	4 WIRE



**A** MOUNTING DETAIL FOR SF1 - POLE MOUNTED PARKING LOT FIXTURE NTS



**B** MOUNTING DETAIL FOR SF2 - POLE MOUNTED PATHWAY FIXTURE NTS

EXTERIOR LIGHTING FIXTURE SCHEDULE						
TYPE	MANUFACTURER & CATALOG NUMBER	LAMP QUANTITY / LAMP	WATTAGE	VOLTAGE	BALLAST QUANTITY/TYPE	DESCRIPTION
SF1	GARCO LIGHTING GULLING LED SERIES 0L9-2-4-210LA-41A1W-UNV-DC-RAL7043	LED	20W X 2	120/277	ELECT.	POLE MOUNTED PARKING LOT LIGHTING WITH TWO FIXTURE ASSEMBLY ON ALUMINUM POLE. 25 HIGH, 5" SQUARE POLE ON 30" HIGH CONCRETE BASE. PAINT COLOR IS CAMPUS STANDARD. PROVIDE PAINT CHIPS FOR APPROVAL.
SF2	VISIONAIR LIGHTING PFB-2-17-248LCS-3K-UMV-PT3X-PC277-DM-WEC	LED	70W	120/277	ELECT.	POLE MOUNTED PATHWAY LIGHTING FIXTURE. 10" HIGH, 3" SQUARE POLE ON 8" HIGH CONCRETE BASE. PROVIDE WITH INTERNAL PHOTOSENSOR, DIMMING DRIVER AND MOTION SENSOR. COLOR SHALL MATCH CAMPUS STANDARD. PROVIDE PAINT CHIPS FOR APPROVAL.

### DRAWING INDEX

DWG. NO.	TITLE
E0.01	SYMBOLS LIST, DRAWING INDEX & DETAILS
E0.02	TITLE 24
E1.00	ELECTRICAL SITE PLAN

ARCHITECT'S STAMP APPROVAL

THE DOCUMENT CONTAINS INFORMATION THAT IS PROPRIETARY TO LPA S, INC. AND IS FURNISHED FOR THE PURPOSES OF REVIEW SECOND OR CONSTRUCTION OF THE PROJECT LISTED IN THE JOB TITLE BOX ABOVE AND SHALL NOT BE USED FOR ANY OTHER PURPOSE OR RELEASED TO ANY OTHER PARTY WITHOUT THE WRITTEN CONSENT OF LPA S, INC. INFORMATION CONTAINED HEREIN IS AN INSTRUMENT OF PROFESSIONAL SERVICES AND SHALL REMAIN THE PROPERTY OF LPA S, INC. ALL RIGHTS RESERVED COPYRIGHT © 2008.

CONSULTANT

REGISTERED PROFESSIONAL ENGINEER  
SCOTT WHEELER  
No. E015491  
Exp. 06/30/17

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ALBURN, CA 95603  
(530) 888-8558

## SYMBOLS LIST, DRAWING INDEX & DETAILS

PROJECT NO: 1102-0005  
DATE: 05.05.17

SHEET NO:

# E0.01



STATE OF CALIFORNIA  
**OUTDOOR LIGHTING**  
 CEC-NRCC-LTO-01-E (Revised 04/16) CALIFORNIA ENERGY COMMISSION  
 CERTIFICATE OF COMPLIANCE NRCC-LTO-01-E  
 Outdoor Lighting (Page 1 of 4)  
 Project Name: College of Marin Lower Parking Lot Date Prepared: May 22, 2017

**A. General Information**  
 Project Address: 123 Any Street, Hayward, CA 94555 Total Illuminated Hardscape Area  
 Phase of Construction:  New Construction  Addition  Alteration  
 Outdoor Lighting Zone (LZ)  LZ-1  LZ-2  LZ-3  LZ-4  
 I have confirmed with the AHJ which OLZ applies to this site. For default lighting zone designations, see Title 24 Part 6, §10-114

**B. LIGHTING COMPLIANCE DOCUMENTS (check box for each document included)**  
 For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, refer to the *Nonresidential Manual published by the California Energy Commission*.  
 NRCC-LTO-01-E Certificate of Compliance  
 NRCC-LTO-02-E Outdoor Lighting Controls Certificate of Compliance  
 NRCC-LTO-03-E Outdoor Lighting Power Allowance Certificate of Compliance  
 NRCC-LTO-04-E Outdoor Lighting Existing Conditions Certificate of Compliance

**C. Summary of Allowed Lighting Power**

1. Sum Total of ALLOWED Outdoor Lighting Wattage from NRCC-LTO-03-E, page 1	=	3687.4
2. Sum Total INSTALLED Outdoor Lighting Wattage from NRCC-LTO-01-E, page 3	=	2704

**D. Declaration of Required Installation Certificates** - Declare by checking all installation Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)  
 NRCC-LTO-01-E - Must be submitted for all buildings  Field Inspector  
 NRCC-LTO-02-E - Must be submitted for lighting control system, or for an Emergency Management Control System (EMCS), to be recognized for compliance  Field Inspector

**E. Declaration of Required Certificates of Acceptance** - Declare by checking all Certificates of Acceptance that will be submitted. (Retain copies and verify forms are completed and signed.)  
 NRCC-LTO-02-A - Must be submitted for outdoor lighting controls.  Field Inspector

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance April 2016

STATE OF CALIFORNIA  
**OUTDOOR LIGHTING**  
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 CERTIFICATE OF COMPLIANCE NRCC-LTO-01-E  
 Outdoor Lighting (Page 1 of 4)  
 Project Name: College of Marin Lower Parking Lot Date Prepared: May 22, 2017

**I. OUTDOOR LIGHTING SCHEDULE AND FIELD INSPECTION ENERGY CHECKLIST**

Luminaire Schedule	Installed Watts	Location	Cutoff	Field Inspector
SF1 LED 20' pole mounted fixture	208	07 2000 Parking lot		<input type="checkbox"/>
SF2 LED 20' pole mounted fixture	78	08 624 Pathway		<input type="checkbox"/>
SF3 LED 20' pole mounted fixture	208	09 2000 Parking lot		<input type="checkbox"/>
SF4 LED 20' pole mounted fixture	78	10 624 Pathway		<input type="checkbox"/>
SF5 LED 20' pole mounted fixture	208	11 2000 Parking lot		<input type="checkbox"/>
SF6 LED 20' pole mounted fixture	78	12 624 Pathway		<input type="checkbox"/>
SF7 LED 20' pole mounted fixture	208	13 2000 Parking lot		<input type="checkbox"/>
SF8 LED 20' pole mounted fixture	78	14 624 Pathway		<input type="checkbox"/>
SF9 LED 20' pole mounted fixture	208	15 2000 Parking lot		<input type="checkbox"/>
SF10 LED 20' pole mounted fixture	78	16 624 Pathway		<input type="checkbox"/>
SF11 LED 20' pole mounted fixture	208	17 2000 Parking lot		<input type="checkbox"/>
SF12 LED 20' pole mounted fixture	78	18 624 Pathway		<input type="checkbox"/>
SF13 LED 20' pole mounted fixture	208	19 2000 Parking lot		<input type="checkbox"/>
SF14 LED 20' pole mounted fixture	78	20 624 Pathway		<input type="checkbox"/>
SF15 LED 20' pole mounted fixture	208	21 2000 Parking lot		<input type="checkbox"/>
SF16 LED 20' pole mounted fixture	78	22 624 Pathway		<input type="checkbox"/>
SF17 LED 20' pole mounted fixture	208	23 2000 Parking lot		<input type="checkbox"/>
SF18 LED 20' pole mounted fixture	78	24 624 Pathway		<input type="checkbox"/>
SF19 LED 20' pole mounted fixture	208	25 2000 Parking lot		<input type="checkbox"/>
SF20 LED 20' pole mounted fixture	78	26 624 Pathway		<input type="checkbox"/>
SF21 LED 20' pole mounted fixture	208	27 2000 Parking lot		<input type="checkbox"/>
SF22 LED 20' pole mounted fixture	78	28 624 Pathway		<input type="checkbox"/>
SF23 LED 20' pole mounted fixture	208	29 2000 Parking lot		<input type="checkbox"/>
SF24 LED 20' pole mounted fixture	78	30 624 Pathway		<input type="checkbox"/>
SF25 LED 20' pole mounted fixture	208	31 2000 Parking lot		<input type="checkbox"/>
SF26 LED 20' pole mounted fixture	78	32 624 Pathway		<input type="checkbox"/>
SF27 LED 20' pole mounted fixture	208	33 2000 Parking lot		<input type="checkbox"/>
SF28 LED 20' pole mounted fixture	78	34 624 Pathway		<input type="checkbox"/>
SF29 LED 20' pole mounted fixture	208	35 2000 Parking lot		<input type="checkbox"/>
SF30 LED 20' pole mounted fixture	78	36 624 Pathway		<input type="checkbox"/>
SF31 LED 20' pole mounted fixture	208	37 2000 Parking lot		<input type="checkbox"/>
SF32 LED 20' pole mounted fixture	78	38 624 Pathway		<input type="checkbox"/>
SF33 LED 20' pole mounted fixture	208	39 2000 Parking lot		<input type="checkbox"/>
SF34 LED 20' pole mounted fixture	78	40 624 Pathway		<input type="checkbox"/>
SF35 LED 20' pole mounted fixture	208	41 2000 Parking lot		<input type="checkbox"/>
SF36 LED 20' pole mounted fixture	78	42 624 Pathway		<input type="checkbox"/>
SF37 LED 20' pole mounted fixture	208	43 2000 Parking lot		<input type="checkbox"/>
SF38 LED 20' pole mounted fixture	78	44 624 Pathway		<input type="checkbox"/>
SF39 LED 20' pole mounted fixture	208	45 2000 Parking lot		<input type="checkbox"/>
SF40 LED 20' pole mounted fixture	78	46 624 Pathway		<input type="checkbox"/>
SF41 LED 20' pole mounted fixture	208	47 2000 Parking lot		<input type="checkbox"/>
SF42 LED 20' pole mounted fixture	78	48 624 Pathway		<input type="checkbox"/>
SF43 LED 20' pole mounted fixture	208	49 2000 Parking lot		<input type="checkbox"/>
SF44 LED 20' pole mounted fixture	78	50 624 Pathway		<input type="checkbox"/>
SF45 LED 20' pole mounted fixture	208	51 2000 Parking lot		<input type="checkbox"/>
SF46 LED 20' pole mounted fixture	78	52 624 Pathway		<input type="checkbox"/>
SF47 LED 20' pole mounted fixture	208	53 2000 Parking lot		<input type="checkbox"/>
SF48 LED 20' pole mounted fixture	78	54 624 Pathway		<input type="checkbox"/>
SF49 LED 20' pole mounted fixture	208	55 2000 Parking lot		<input type="checkbox"/>
SF50 LED 20' pole mounted fixture	78	56 624 Pathway		<input type="checkbox"/>
SF51 LED 20' pole mounted fixture	208	57 2000 Parking lot		<input type="checkbox"/>
SF52 LED 20' pole mounted fixture	78	58 624 Pathway		<input type="checkbox"/>
SF53 LED 20' pole mounted fixture	208	59 2000 Parking lot		<input type="checkbox"/>
SF54 LED 20' pole mounted fixture	78	60 624 Pathway		<input type="checkbox"/>
SF55 LED 20' pole mounted fixture	208	61 2000 Parking lot		<input type="checkbox"/>
SF56 LED 20' pole mounted fixture	78	62 624 Pathway		<input type="checkbox"/>
SF57 LED 20' pole mounted fixture	208	63 2000 Parking lot		<input type="checkbox"/>
SF58 LED 20' pole mounted fixture	78	64 624 Pathway		<input type="checkbox"/>
SF59 LED 20' pole mounted fixture	208	65 2000 Parking lot		<input type="checkbox"/>
SF60 LED 20' pole mounted fixture	78	66 624 Pathway		<input type="checkbox"/>
SF61 LED 20' pole mounted fixture	208	67 2000 Parking lot		<input type="checkbox"/>
SF62 LED 20' pole mounted fixture	78	68 624 Pathway		<input type="checkbox"/>
SF63 LED 20' pole mounted fixture	208	69 2000 Parking lot		<input type="checkbox"/>
SF64 LED 20' pole mounted fixture	78	70 624 Pathway		<input type="checkbox"/>
SF65 LED 20' pole mounted fixture	208	71 2000 Parking lot		<input type="checkbox"/>
SF66 LED 20' pole mounted fixture	78	72 624 Pathway		<input type="checkbox"/>
SF67 LED 20' pole mounted fixture	208	73 2000 Parking lot		<input type="checkbox"/>
SF68 LED 20' pole mounted fixture	78	74 624 Pathway		<input type="checkbox"/>
SF69 LED 20' pole mounted fixture	208	75 2000 Parking lot		<input type="checkbox"/>
SF70 LED 20' pole mounted fixture	78	76 624 Pathway		<input type="checkbox"/>
SF71 LED 20' pole mounted fixture	208	77 2000 Parking lot		<input type="checkbox"/>
SF72 LED 20' pole mounted fixture	78	78 624 Pathway		<input type="checkbox"/>
SF73 LED 20' pole mounted fixture	208	79 2000 Parking lot		<input type="checkbox"/>
SF74 LED 20' pole mounted fixture	78	80 624 Pathway		<input type="checkbox"/>
SF75 LED 20' pole mounted fixture	208	81 2000 Parking lot		<input type="checkbox"/>
SF76 LED 20' pole mounted fixture	78	82 624 Pathway		<input type="checkbox"/>
SF77 LED 20' pole mounted fixture	208	83 2000 Parking lot		<input type="checkbox"/>
SF78 LED 20' pole mounted fixture	78	84 624 Pathway		<input type="checkbox"/>
SF79 LED 20' pole mounted fixture	208	85 2000 Parking lot		<input type="checkbox"/>
SF80 LED 20' pole mounted fixture	78	86 624 Pathway		<input type="checkbox"/>
SF81 LED 20' pole mounted fixture	208	87 2000 Parking lot		<input type="checkbox"/>
SF82 LED 20' pole mounted fixture	78	88 624 Pathway		<input type="checkbox"/>
SF83 LED 20' pole mounted fixture	208	89 2000 Parking lot		<input type="checkbox"/>
SF84 LED 20' pole mounted fixture	78	90 624 Pathway		<input type="checkbox"/>
SF85 LED 20' pole mounted fixture	208	91 2000 Parking lot		<input type="checkbox"/>
SF86 LED 20' pole mounted fixture	78	92 624 Pathway		<input type="checkbox"/>
SF87 LED 20' pole mounted fixture	208	93 2000 Parking lot		<input type="checkbox"/>
SF88 LED 20' pole mounted fixture	78	94 624 Pathway		<input type="checkbox"/>
SF89 LED 20' pole mounted fixture	208	95 2000 Parking lot		<input type="checkbox"/>
SF90 LED 20' pole mounted fixture	78	96 624 Pathway		<input type="checkbox"/>
SF91 LED 20' pole mounted fixture	208	97 2000 Parking lot		<input type="checkbox"/>
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SF95 LED 20' pole mounted fixture	208	101 2000 Parking lot		<input type="checkbox"/>
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SF112 LED 20' pole mounted fixture	78	118 624 Pathway		<input type="checkbox"/>
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SF119 LED 20' pole mounted fixture	208	125 2000 Parking lot		<input type="checkbox"/>
SF120 LED 20' pole mounted fixture	78	126 624 Pathway		<input type="checkbox"/>
SF121 LED 20' pole mounted fixture	208	127 2000 Parking lot		<input type="checkbox"/>
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SF124 LED 20' pole mounted fixture	78	130 624 Pathway		<input type="checkbox"/>
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SF126 LED 20' pole mounted fixture	78	132 624 Pathway		<input type="checkbox"/>
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SF128 LED 20' pole mounted fixture	78	134 624 Pathway		<input type="checkbox"/>
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SF152 LED 20' pole mounted fixture	78	158 624 Pathway		<input type="checkbox"/>
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SF154 LED 20' pole mounted fixture	78	160 624 Pathway		<input type="checkbox"/>
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SF156 LED 20' pole mounted fixture	78	162 624 Pathway		<input type="checkbox"/>
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SF158 LED 20' pole mounted fixture	78	164 624 Pathway		<input type="checkbox"/>
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SF170 LED 20' pole mounted fixture	78	176 624 Pathway		<input type="checkbox"/>
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SF172 LED 20' pole mounted fixture	78	178 624 Pathway		<input type="checkbox"/>
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SF174 LED 20' pole mounted fixture	78	180 624 Pathway		<input type="checkbox"/>
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SF176 LED 20' pole mounted fixture	78	182 624 Pathway		<input type="checkbox"/>
SF177 LED 20' pole mounted fixture	208	183 2000 Parking lot		<input type="checkbox"/>
SF178 LED 20' pole mounted fixture	78	184 624 Pathway		<input type="checkbox"/>
SF179 LED 20' pole mounted fixture	208	185 2000 Parking lot		<input type="checkbox"/>
SF180 LED 20' pole mounted fixture	78	186 624 Pathway	</	







## COLLEGE OF MARIN INDIAN VALLEY CAMPUS

### ORGANIC FARM PARKING LOT IMPROVEMENTS

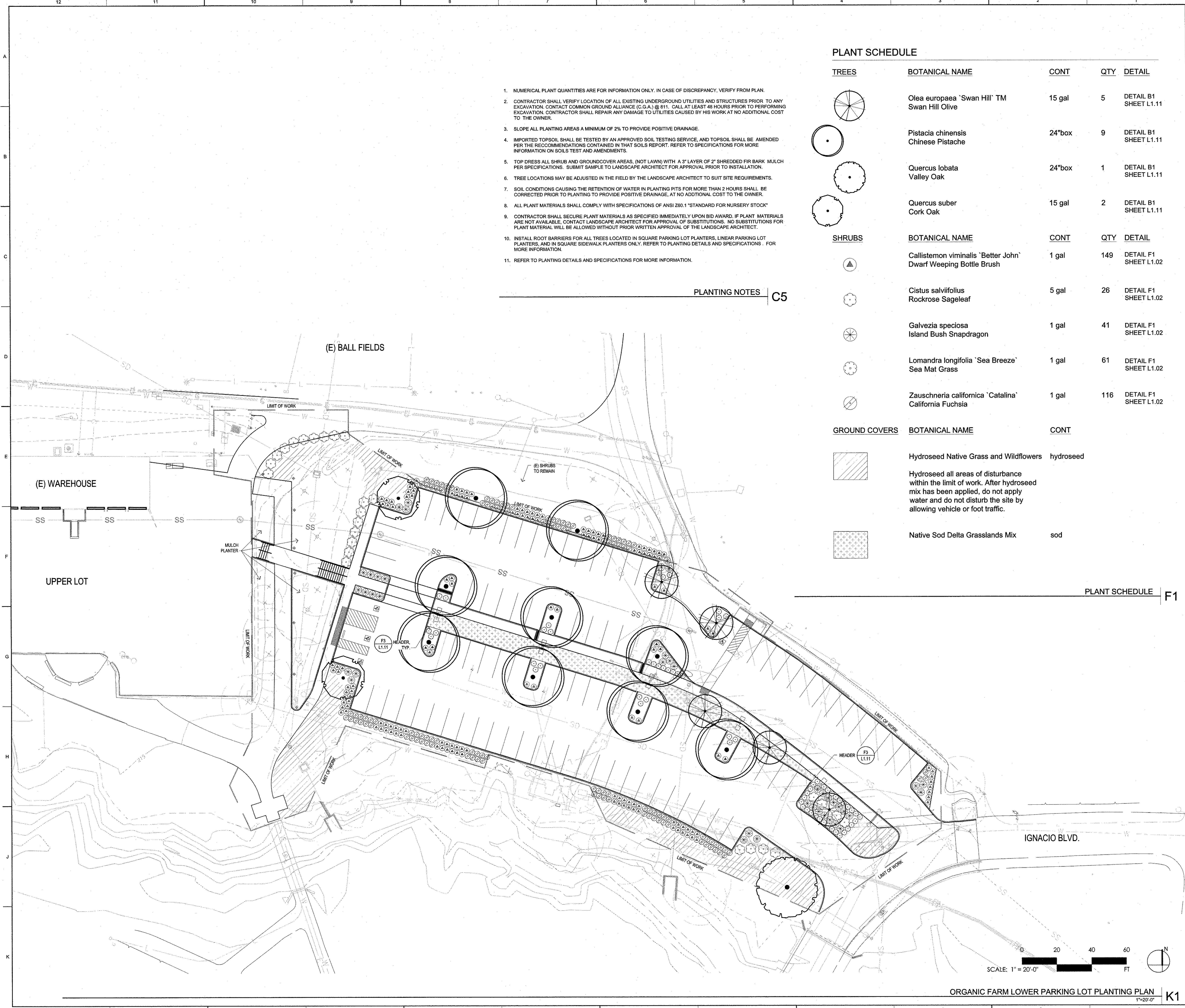
MARIN, CA

#### PLANT SCHEDULE

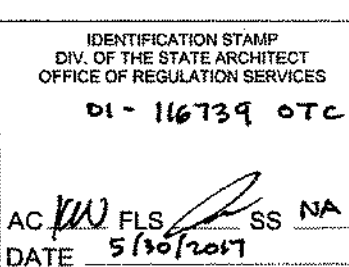
TREES	BOTANICAL NAME	CONT	QTY	DETAIL
	<i>Olea europaea</i> 'Swan Hill' TM Swan Hill Olive	15 gal	5	DETAIL B1 SHEET L1.11
	<i>Pistacia chinensis</i> Chinese Pistache	24"box	9	DETAIL B1 SHEET L1.11
	<i>Quercus lobata</i> Valley Oak	24"box	1	DETAIL B1 SHEET L1.11
	<i>Quercus suber</i> Cork Oak	15 gal	2	DETAIL B1 SHEET L1.11
SHRUBS	BOTANICAL NAME	CONT	QTY	DETAIL
	<i>Callistemon viminalis</i> 'Better John' Dwarf Weeping Bottle Brush	1 gal	149	DETAIL F1 SHEET L1.02
	<i>Cistus salviifolius</i> Rockrose Sageleaf	5 gal	26	DETAIL F1 SHEET L1.02
	<i>Galvezia speciosa</i> Island Bush Snapdragon	1 gal	41	DETAIL F1 SHEET L1.02
	<i>Lomandra longifolia</i> 'Sea Breeze' Sea Mat Grass	1 gal	61	DETAIL F1 SHEET L1.02
	<i>Zauschneria californica</i> 'Catalina' California Fuchsia	1 gal	116	DETAIL F1 SHEET L1.02
GROUND COVERS	BOTANICAL NAME	CONT		
	Hydeseed Native Grass and Wildflowers	hydeseed		
	Hydeseed all areas of disturbance within the limit of work. After hydeseed mix has been applied, do not apply water and do not disturb the site by allowing vehicle or foot traffic.			
	Native Sod Delta Grasslands Mix	sod		

- NUMERICAL PLANT QUANTITIES ARE FOR INFORMATION ONLY. IN CASE OF DISCREPANCY, VERIFY FROM PLAN.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UNDERGROUND UTILITIES AND STRUCTURES PRIOR TO ANY EXCAVATION. CONTACT COMMON GROUND ALLIANCE (C.G.A.) @ 811. CALL AT LEAST 48 HOURS PRIOR TO PERFORMING EXCAVATION. CONTRACTOR SHALL REPAIR ANY DAMAGE TO UTILITIES CAUSED BY HIS WORK AT NO ADDITIONAL COST TO THE OWNER.
- SLOPE ALL PLANTING AREAS A MINIMUM OF 2% TO PROVIDE POSITIVE DRAINAGE.
- IMPORTED TOPSOIL SHALL BE TESTED BY AN APPROVED SOIL TESTING SERVICE, AND TOPSOIL SHALL BE AMENDED PER THE RECOMMENDATIONS CONTAINED IN THAT SOILS REPORT. REFER TO SPECIFICATIONS FOR MORE INFORMATION ON SOILS TEST AND AMENDMENTS.
- TOP DRESS ALL SHRUB AND GROUND COVER AREAS, (NOT LAWN) WITH A 3" LAYER OF 2" SHREDDED FIR BARK MULCH PER SPECIFICATIONS. SUBMIT SAMPLE TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.
- TREE LOCATIONS MAY BE ADJUSTED IN THE FIELD BY THE LANDSCAPE ARCHITECT TO SUIT SITE REQUIREMENTS.
- SOIL CONDITIONS CAUSING THE RETENTION OF WATER IN PLANTING PITS FOR MORE THAN 2 HOURS SHALL BE CORRECTED PRIOR TO PLANTING TO PROVIDE POSITIVE DRAINAGE, AT NO ADDITIONAL COST TO THE OWNER.
- ALL PLANT MATERIALS SHALL COMPLY WITH SPECIFICATIONS OF ANSI Z60.1 "STANDARD FOR NURSERY STOCK"
- CONTRACTOR SHALL SECURE PLANT MATERIALS AS SPECIFIED IMMEDIATELY UPON BID AWARD. IF PLANT MATERIALS ARE NOT AVAILABLE, CONTACT LANDSCAPE ARCHITECT FOR APPROVAL OF SUBSTITUTIONS. NO SUBSTITUTIONS FOR PLANT MATERIAL WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT.
- INSTALL ROOT BARRIERS FOR ALL TREES LOCATED IN SQUARE PARKING LOT PLANTERS, LINEAR PARKING LOT PLANTERS, AND IN SQUARE SIDEWALK PLANTERS ONLY. REFER TO PLANTING DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
- REFER TO PLANTING DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.

#### PLANTING NOTES C5



#### PLANT SCHEDULE F1



ARCHITECT'S STAMP

APPROVAL

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## LANDSCAPE PLAN

PROJECT NO: 1102-0005  
DATE: 05.30.17

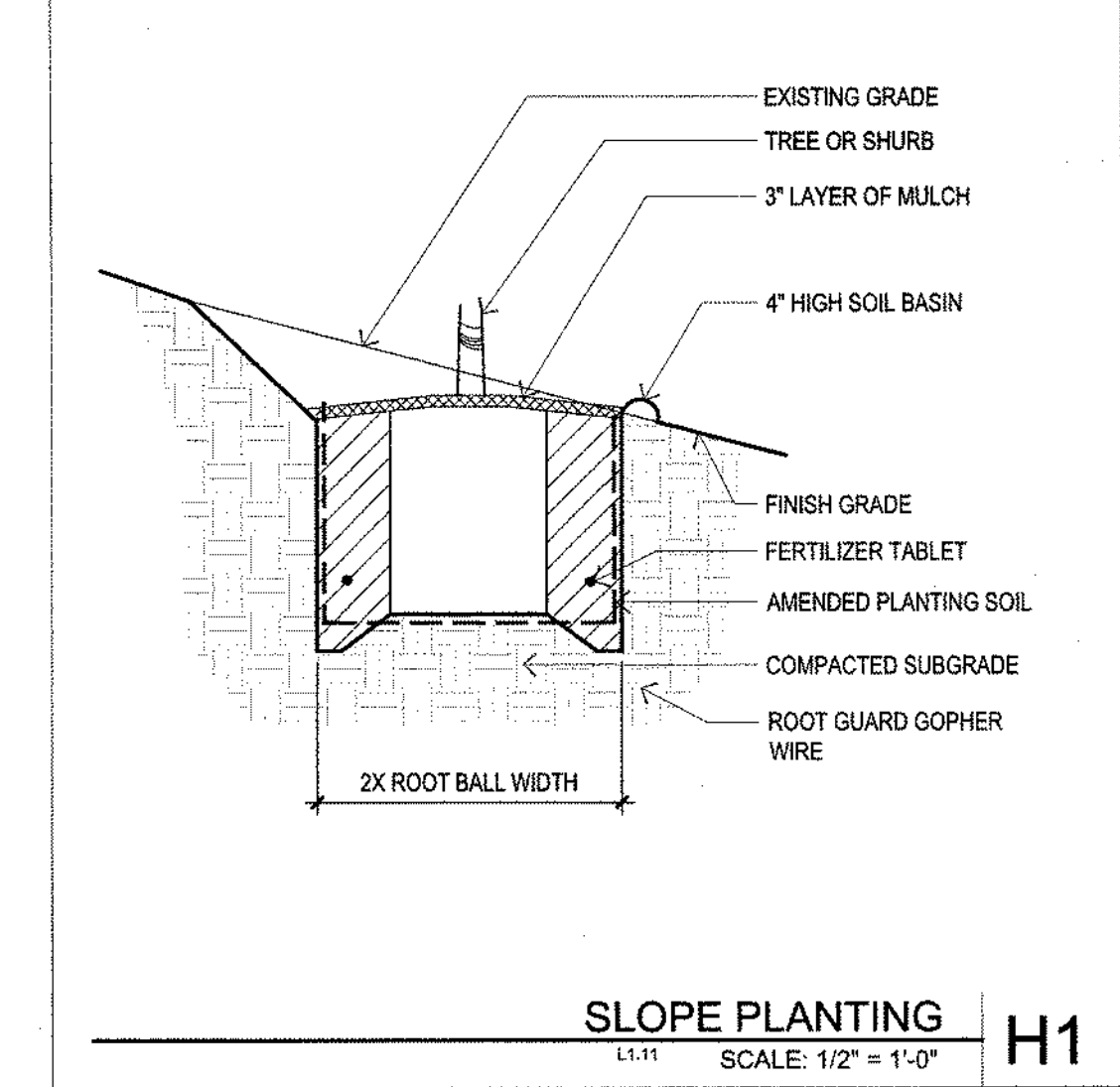
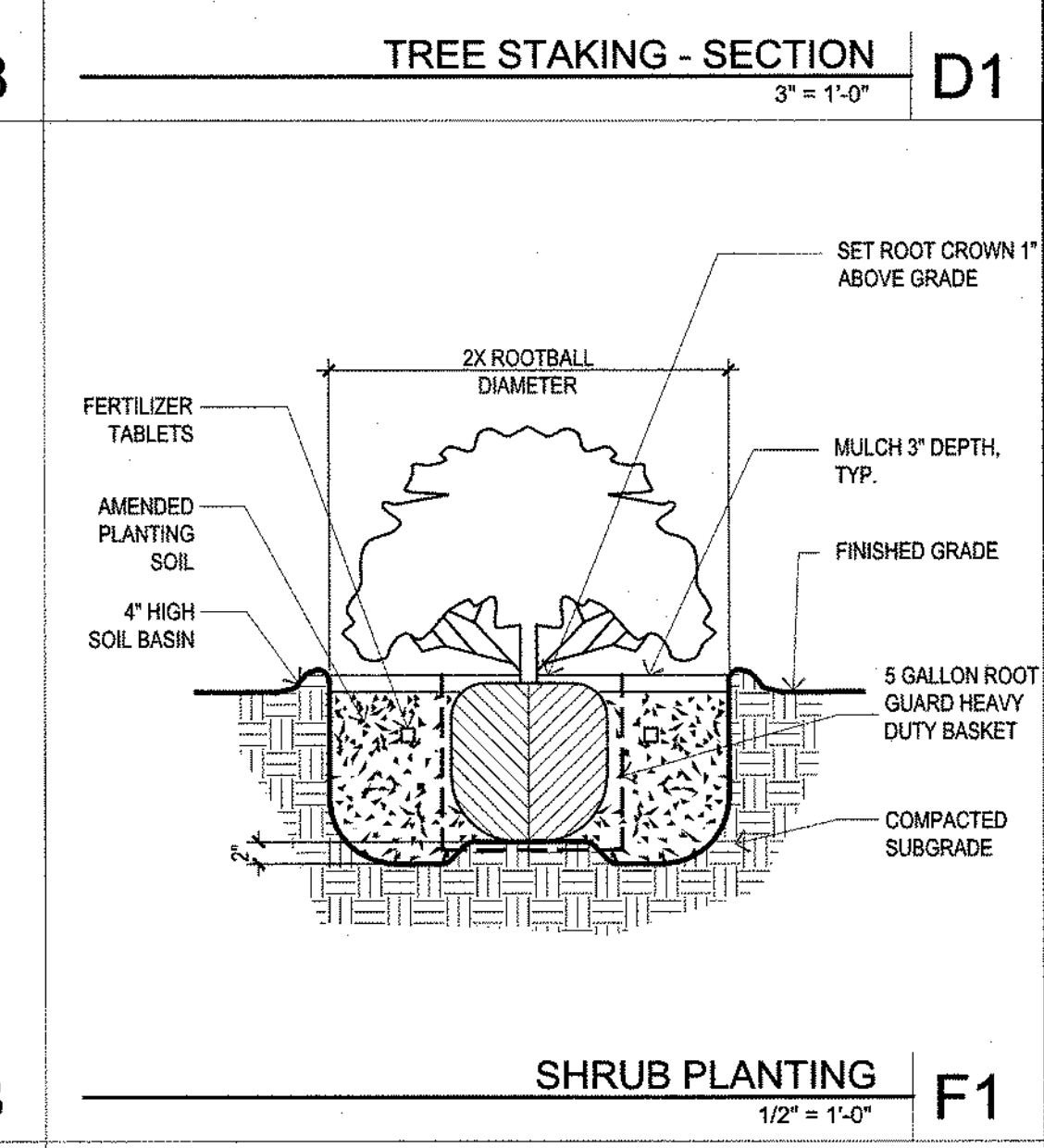
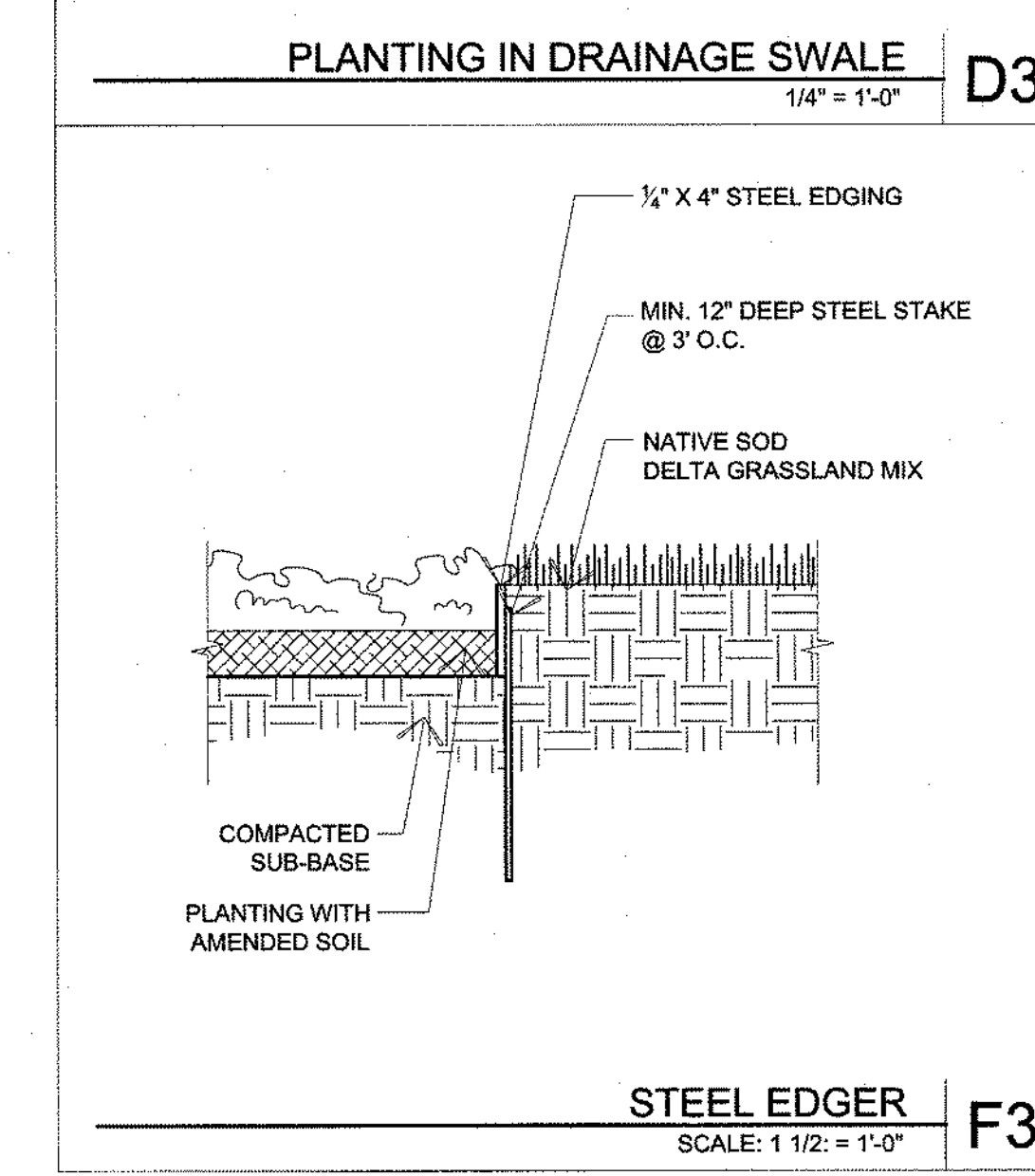
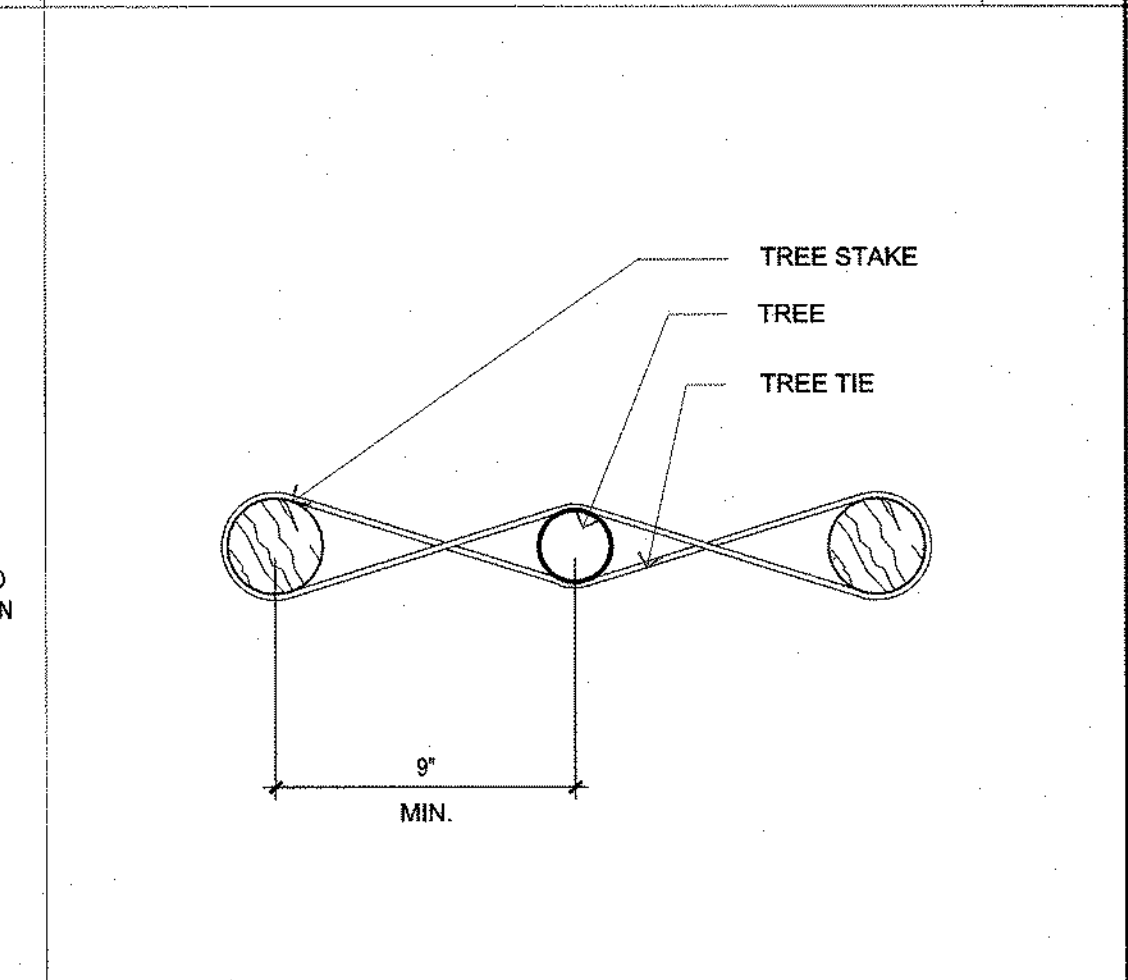
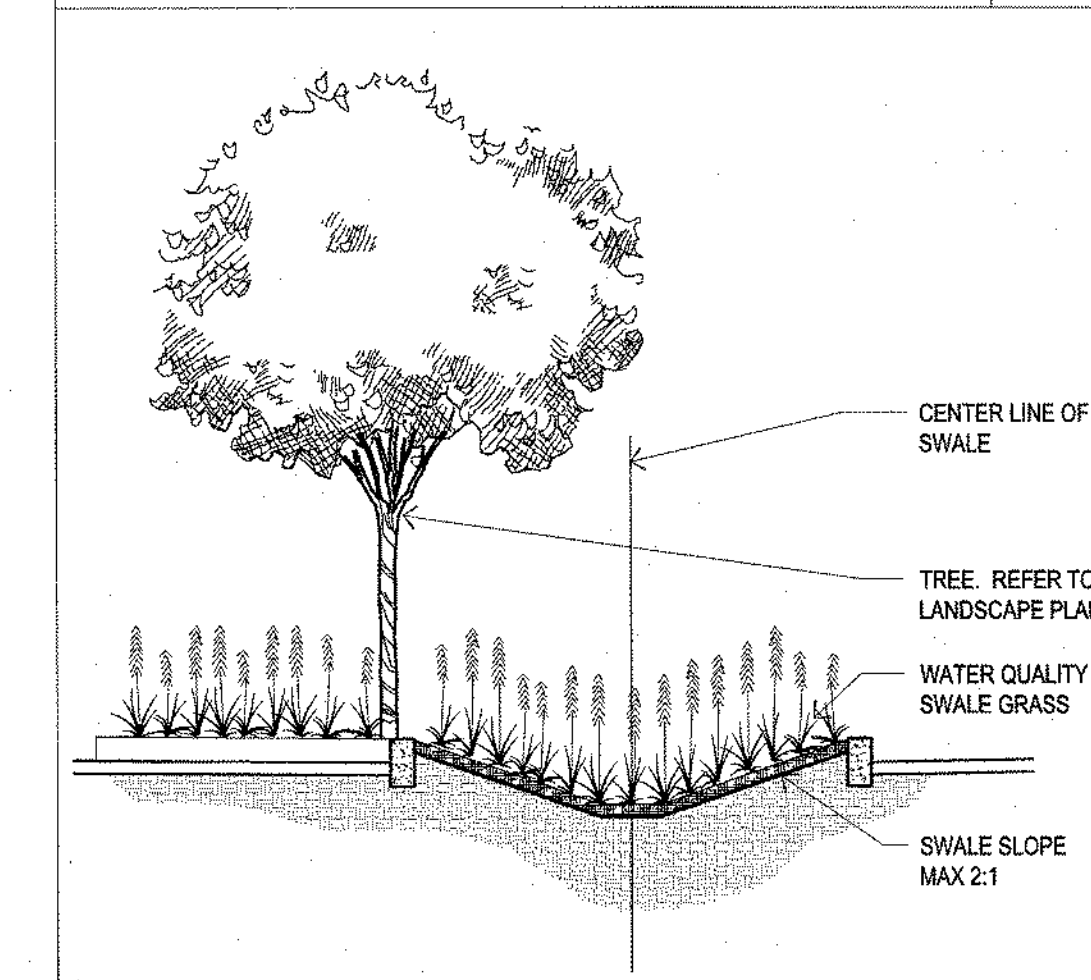
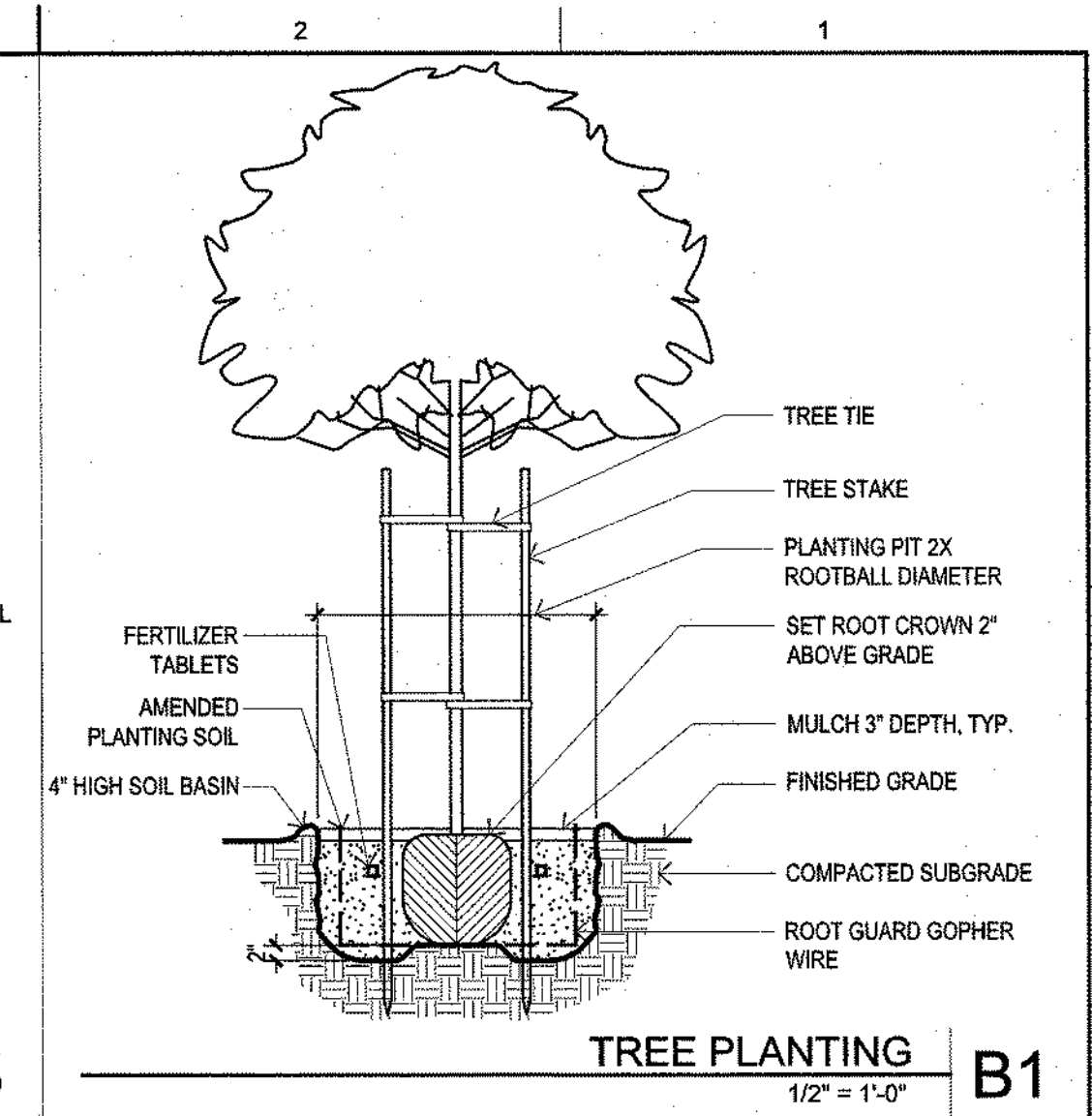
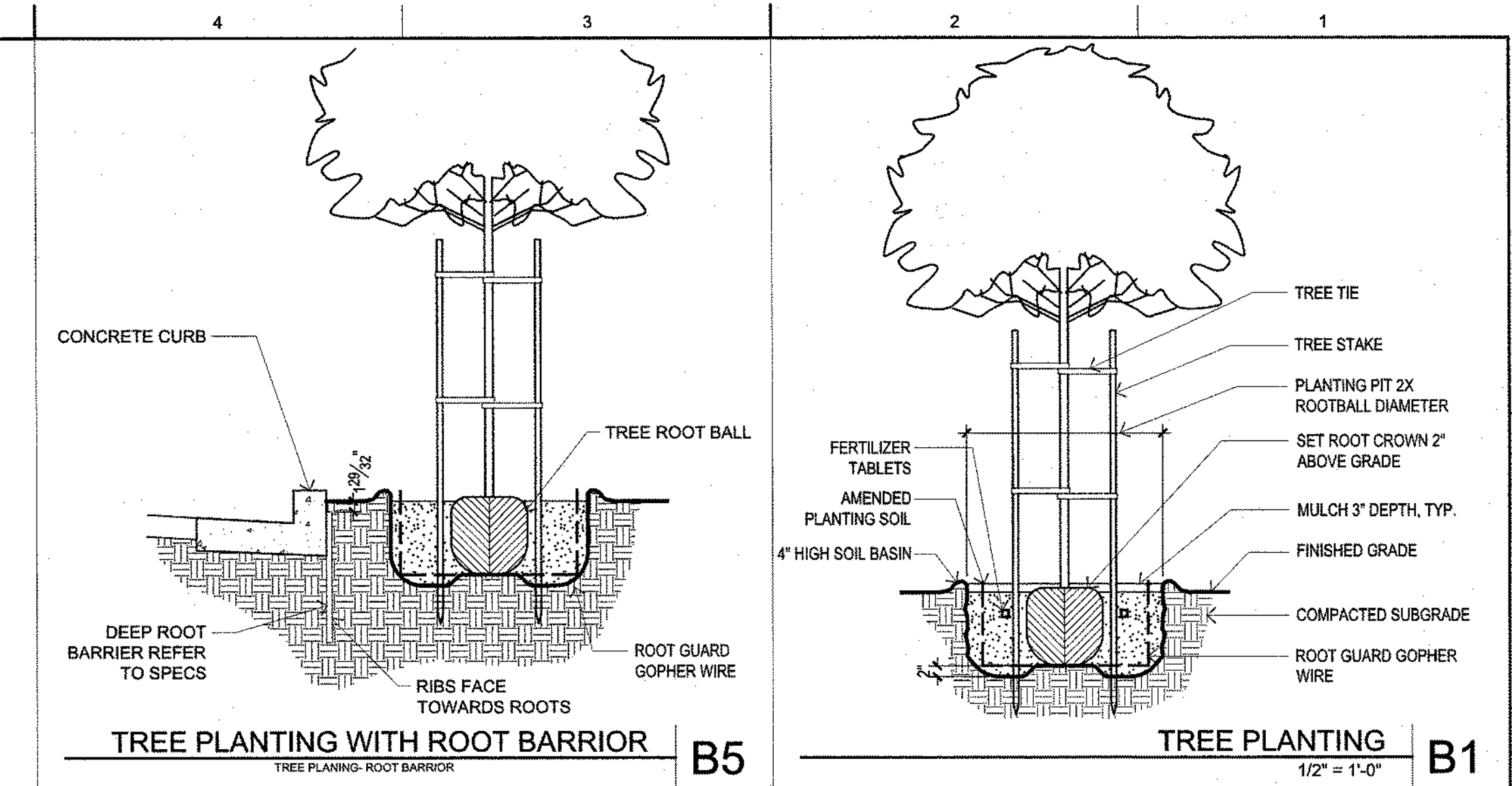
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## COLLEGE OF MARIN INDIAN VALLEY CAMPUS

ORGANIC FARM  
PARKING LOT IMPROVEMENTS  
MARIN, CA



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## LANDSCAPE DETAILS

PROJECT NO: 1102-0005  
DATE: 05.30.17

SHEET NO:

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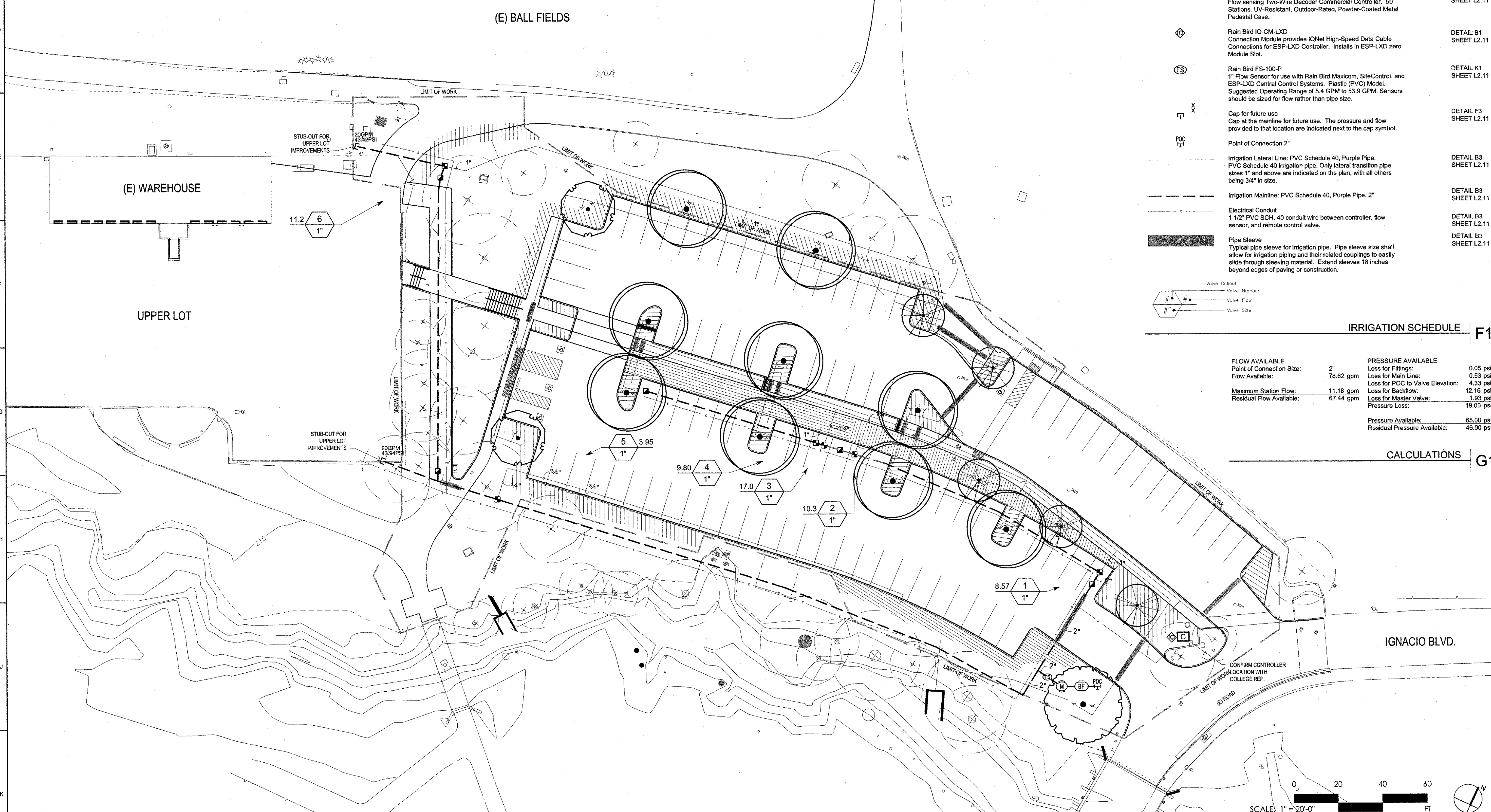


IRRIGATION SCHEDULE			
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI	GPM
1402	Rain Bird RWS-B-C-P Root Watering System with 4.0" diameter x 36.0" long with locking grate, semi-rigid mesh tube. Check Valve and Purple Grate. Rain Bird bubbler option as indicated: 1402 0.5 gm	40	0.50
	Hunter ICV-101-40 1" Drip Control Zone 1" ICV Globe Valve with 1" HY100 filter system. Pressure Regulation: 40psi. Flow Range: 2 GPM to 20 GPM. 150 mesh stainless steel screen.		
	Area to Receive Drip Line Hunter Eco-Mat and PLD-ESD Fleece wrapped inline emitter tubing, with the blanket Eco-Mat. Evenly disperses water from under the surface. 0.6GPH emitters at 12.0" O.C. Drip line laterals spaced at 14.0" apart, with emitters offset for triangular pattern. Specify PLD-LOC.		
	Area to Receive Drip Line Rain Bird XFS-P-06-18 (18") XFS Pressure Compensating Drip Line w/Copper Shield Technology. 0.6GPH emitters at 18.0" O.C. Laterals spaced at 18.0" apart, with emitters offset for triangular pattern. Purple Tubing for Non-Potable Water. Specify XF insert fittings.		
	Hunter ICV-G-FS-R 1" Plastic Electric Remote Control Valves, Globe Configuration, with NPT Threaded Inlet/Outlet, for Commercial/Municipal Use. With Filter Sentry Factory Installed Option, and Reclaimed Water ID, Purple Handle.		
	Rain Bird 33-DNP 3/4" 3/4" Brass Quick-Coupling Valve, with Corrosion-Resistant Stainless Steel Spring, Locking Thermoplastic Non-Potable Purple Rubber Cover, and 2-Piece Body.		
	Rain Bird PESB-PRS-D 2" Plastic Industrial Valves. Low Flow Operating Capability, Globe Configuration. With Pressure Regulating Module, and Scrubber Technology for Reliable Performance in Dirty Water Irrigation Applications.		
	Existing Backflow Preventor 2" Test and repair as needed.		
	Rain Bird ESP-LXD-LXMPED Flow sensing Two-Wire Decoded Commercial Controller. 50 Stations. UV-Resistant, Outdoor-Rated, Powder-Coated Metal Pedestal Case.		
	Rain Bird IQ-CM-LXD Connection Module provides IQNet High-Speed Data Cable Connections for ESP-LXD Controller. Installs in ESP-LXD zero Module Slot.		
	Rain Bird FS-100-P 1" Flow Sensor for use with Rain Bird Maxicom, SiteControl, and ESP-LXD Central Control Systems. Plastic (PVC) Model. Suggested Operating Range of 5.4 GPM to 53.9 GPM. Sensors should be sized for flow rather than pipe size.		
	Cap for future use Cap at the mainline for future use. The pressure and flow provided to that location are indicated next to the cap symbol.		
	Point of Connection 2"		
	Irrigation Lateral Line: PVC Schedule 40, Purple Pipe. PVC Schedule 40 irrigation pipe. Only lateral transition pipe sizes 1" and above are indicated on the plan, with all others being 3/4" in size.		
	Irrigation Mainline: PVC Schedule 40, Purple Pipe. 2"		
	Electrical Conduit 1 1/2" PVC SCH. 40 conduit wire between controller, flow sensor, and remote control valve.		
	Pipe Sleeve Typical pipe sleeve for irrigation pipe. Pipe sleeve size shall allow for irrigation piping and their related couplings to easily slide through sleeving material. Extend sleeves 18 inches beyond edges of paving or construction.		
	Valve Cutout Valve Number Valve Flow Valve Size		

### IRRIGATION NOTES C4

- #### IRRIGATION NOTES
- ##### GENERAL
- ALL LOCAL MUNICIPAL AND STATE LAWS, RULES AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR.
  - THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, STRUCTURES AND SERVICES BEFORE COMMENCING WORK. THE LOCATIONS OF UTILITIES, STRUCTURES AND SERVICES SHOWN IN THESE PLANS ARE APPROXIMATE ONLY. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE.
  - THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED TO PERFORM THE WORK INDICATED HEREIN BEFORE BEGINNING WORK.
  - THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED TO PERFORM THE WORK INDICATED HEREIN BEFORE BEGINNING WORK.
  - THIS DESIGN IS DIAGRAMMATIC. ALL IRRIGATION EQUIPMENT SHOWN IN PAVED AREAS IS FOR DESIGN CLARITY ONLY AND IS TO BE INSTALLED WITHIN PLANTING AREAS.
  - THE CONTRACTOR SHALL NOT WILLFULLY INSTALL ANY EQUIPMENT AS SHOWN ON THE PLANS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN CONDITIONS EXIST THAT WERE NOT EVIDENT AT THE TIME THESE PLANS WERE PREPARED. ANY SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO ANY WORK OR THE IRRIGATION CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY FIELD CHANGES DEEMED NECESSARY BY THE OWNER.
  - INSTALL ALL EQUIPMENT AS SHOWN IN THE DETAILS AND PER SPECIFICATIONS.
  - ALL CONTROLLER WIRE SHALL BE INSTALLED IN SCH. 40 CONDUIT, MINIMUM SIZE SHALL BE 1 1/2".
  - THE CONTRACTOR SHALL PROVIDE ADEQUATE IRRIGATION TO ALL PLANTERS. IRRIGATION COVERAGE OF PLANTER MAY REQUIRE ADDITIONAL IRRIGATION EQUIPMENT TO PROVIDE REQUIRED COVERAGE TO SUSTAIN HEALTHY PLANT GROWTH.
- ##### PIPE
- MAINLINE SHOWN WITHIN PAVING FOR CLARITY ONLY. ACTUAL MAINLINE LOCATION TO BE A MINIMUM OF 18" OFF ADJACENT HARDSCAPE, FENCE, PROPERTY LINES AND OTHER OBSTACLES TYP.
  - LATERAL LINES ARE SHOWN WITHIN PAVING FOR CLARITY ONLY. ACTUAL LOCATION TO BE WITHIN PLANTER. CONFIRM LAYOUT IN FIELD WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO COMMENCING WORK.
  - ALL MAINLINE PIPE UNDER PAVED AREAS TO BE INSTALLED IN SLEEVE TWICE THE DIAMETER OF THE PIPE CARRIED. LATERAL LINE SHALL BE INSTALLED IN SLEEVE TWICE THE DIAMETER OF THE PIPE CARRIED. SLEEVES TO EXTEND AT LEAST 18" PAST THE EDGE OF THE PAVING. SLEEVE ENDS SHALL BE FILLED WITH EXPANDING FOAM TO KEEP OUT DIRT AFTER PIPE IS INSTALLED.
  - ALL PIPE SIZES SHALL CONFORM TO THOSE SHOWN ON THE DRAWINGS. LATERAL PIPE NOT SIZED ON DRAWING AND THAT ARE DOWNSTREAM OF 1" PIPE SHALL BE MINIMUM OF 3/4" PIPE SIZE. THE ONLY ALLOWED PIPE SIZE SUBSTITUTIONS WILL BE FOR LARGER SIZED PIPE.
  - CONTRACTOR TO FLUSH MAINLINE AND LATERAL IRRIGATION CLEAR OF ALL DEBRIS BEFORE LINES ARE PRESSURIZED.
- ##### VALVES
- ALL QUICK COUPLER AND REMOTE CONTROL VALVES TO BE INSTALLED IN SHRUB OR GROUND COVER AREAS WHERE POSSIBLE.
  - ALL QUICK COUPLER AND REMOTE CONTROL VALVES TO BE INSTALLED AS SHOWN ON THE INSTALLATION DETAILS. INSTALL ALL QUICK COUPLER AND REMOTE CONTROL VALVES WITHIN 18" OF HARDSCAPE.
  - REMOTE CONTROL VALVES AND ISOLATION VALVE LOCATIONS ON THIS DRAWING ARE APPROXIMATE. THE LANDSCAPE CONTRACTOR SHALL STAKE OUT EACH REMOTE CONTROL VALVE AND ISOLATION VALVE LOCATION FOR REVIEW AND APPROVAL BY OWNER REPRESENTATIVE PRIOR TO INSTALLATION OF ALL VALVES. MINOR MODIFICATIONS OF REMOTE CONTROL VALVES AND ISOLATION VALVE LOCATIONS AS REQUESTED BY THE OWNER REPRESENTATIVE SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

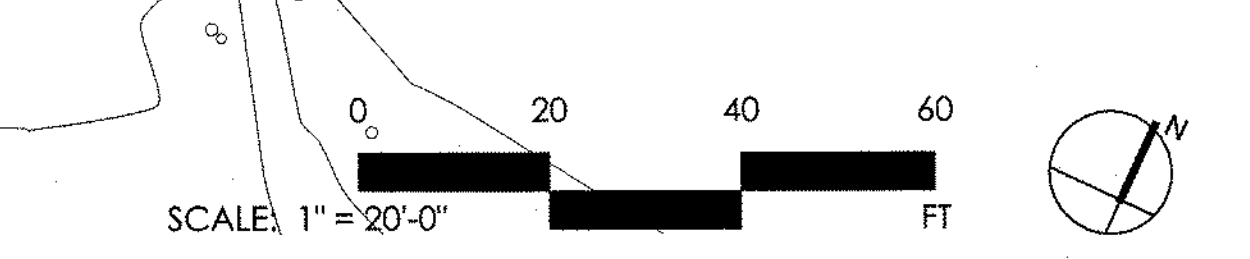
- ##### SUBSURFACE DRIPPERLINE
- SUBSURFACE DRIPPERLINE IS DESIGNED FOR APPLICATIONS UTILIZING A GRID DESIGN, THE RESULT BEING A COMPLETE WETTED AREA WITHIN THE GRID.
  - LAYOUT DRIPPERLINE ROWS LENGTHWISE IN A ZONE, RATHER THAN IN SHORTER ROWS ACROSS A ZONE.
  - SUBSURFACE DRIPPERLINE FOR SHRUB AREAS SHALL HAVE A MINIMUM 3" OF COMPACTED MULCH COVER. SUPPLY AND EXHAUST MANIFOLDS SHALL HAVE A MINIMUM 12" COVER.
  - SUBSURFACE DRIPPERLINE BEDS SHALL BE SMOOTH AND UNIFORM WITHOUT DIPS.
  - THE SUBSURFACE DRIP SYSTEM IS DESIGNED TO MEET A MINIMUM FLUSH FLOW VELOCITY OF 0.617 GPM/100 FEET OF TUBING. THE CONTRACTOR SHALL BE RESPONSIBLE TO FLUSH THE ENTIRE SYSTEM OF DEBRIS PRIOR TO PRESSURIZING DRIP VALVE ZONES.
  - DRIPPERLINE SUPPLY AND EXHAUST MANIFOLDS WILL BE INSTALLED FOR EACH ZONE. FLUSH MANIFOLDS ARE DESIGNED TO FEED INTO A FLUSH VALVE. BOTH SUPPLY AND FLUSH MANIFOLDS SHALL BE SIZED TO ACCOMMODATE THE MINIMUM FLUSH FLOW VELOCITY.
  - SPACE DRIPPERLINE PER PLAN. OFFSET DRIPPERLINE A MINIMUM OF 12" FROM HARDSCAPE UNLESS NOTED ON DRAWINGS OR DETAILS.
  - MAXIMUM LENGTH OF RUN SHALL NOT EXCEED MANUFACTURER'S SPECIFICATIONS.
  - STAKE DRIPPERLINE MINIMUM OF EVERY 36" ALONG ENTIRE LENGTH OF TUBING. CRISS-CROSS TWO (2) STAKES AT EACH FITTING.
  - AFTER DRIPPERLINE IS BACKFILLED AND COVERAGE TEST IS APPROVED, APPLY BARK MULCH OVER ENTIRE PLANTER BED PER PLANTING PLAN.
  - DRIPPERLINE IS SHOWN AS A SCHEMATIC ON PLANS. REFER TO DETAILS AND NOTES FOR LAYOUT OF DRIPPERLINE.
- ##### POP-UP SPRAY
- ALL HEADS ARE TO BE INSTALLED WITH THE NOZZLE, SCREEN AND ARCS SHOWN ON THE PLANS. ALL HEADS ARE TO BE ADJUSTED TO PREVENT OVER SPRAY ONTO BUILDINGS, WALLS, FENCES AND PAVED SURFACES. THIS INCLUDES, BUT NOT LIMITED TO, ADJUSTMENT OF DIFFUSER PIN OR ADJUSTMENT SCREW, REPLACEMENT OF NOZZLES WITH MORE APPROPRIATE RADIUS UNITS AND THE ADJUSTMENT OF ADJUSTABLE ARC NOZZLES.
  - SPACING OF POP-UP SPRAY HEADS SHALL ALLOW HEAD TO HEAD COVERAGE.
  - CONTRACTOR SHALL ADJUST ALL HEADS AS REQUIRED TO ACCOMMODATE ANY VERTICAL OBSTRUCTIONS THAT MAY OCCUR, INCLUDING BUT NOT LIMITED TO LIGHT POLES, FIRE HYDRANTS, ETC. VERIFY ALL HEAD LAYOUT WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO COMMENCING WORK.
- ##### CONTROLLER
- CONTRACTOR TO INSTALL CONTROLLER IN STEEL PEDESTAL ENCLOSURE PER MANUFACTURER'S RECOMMENDATIONS.
  - CONTRACTOR TO COORDINATE 110 V ELECTRICAL SUPPLY POWER FOR CONTROLLER.
  - CONTROLLER TO BE GROUNDED PER MANUFACTURER AND INDUSTRY STANDARDS.



#### IRRIGATION SCHEDULE F1

FLOW AVAILABLE	Point of Connection Size:	2"	78.62 gpm	LOSS AVAILABLE	Loss for Fittings:	0.05 psi
Flow Available:				Loss for Main Line:		0.53 psi
Maximum Station Flow:			11.18 gpm	Loss for POC to Valve Elevation:		4.33 psi
Residual Flow Available:			67.44 gpm	Loss for Backflow:		12.16 psi
				Loss for Master Valve:		1.93 psi
				Pressure Loss:		19.00 psi
				Pressure Available:		65.00 psi
				Residual Pressure Available:		46.00 psi

#### CALCULATIONS G1



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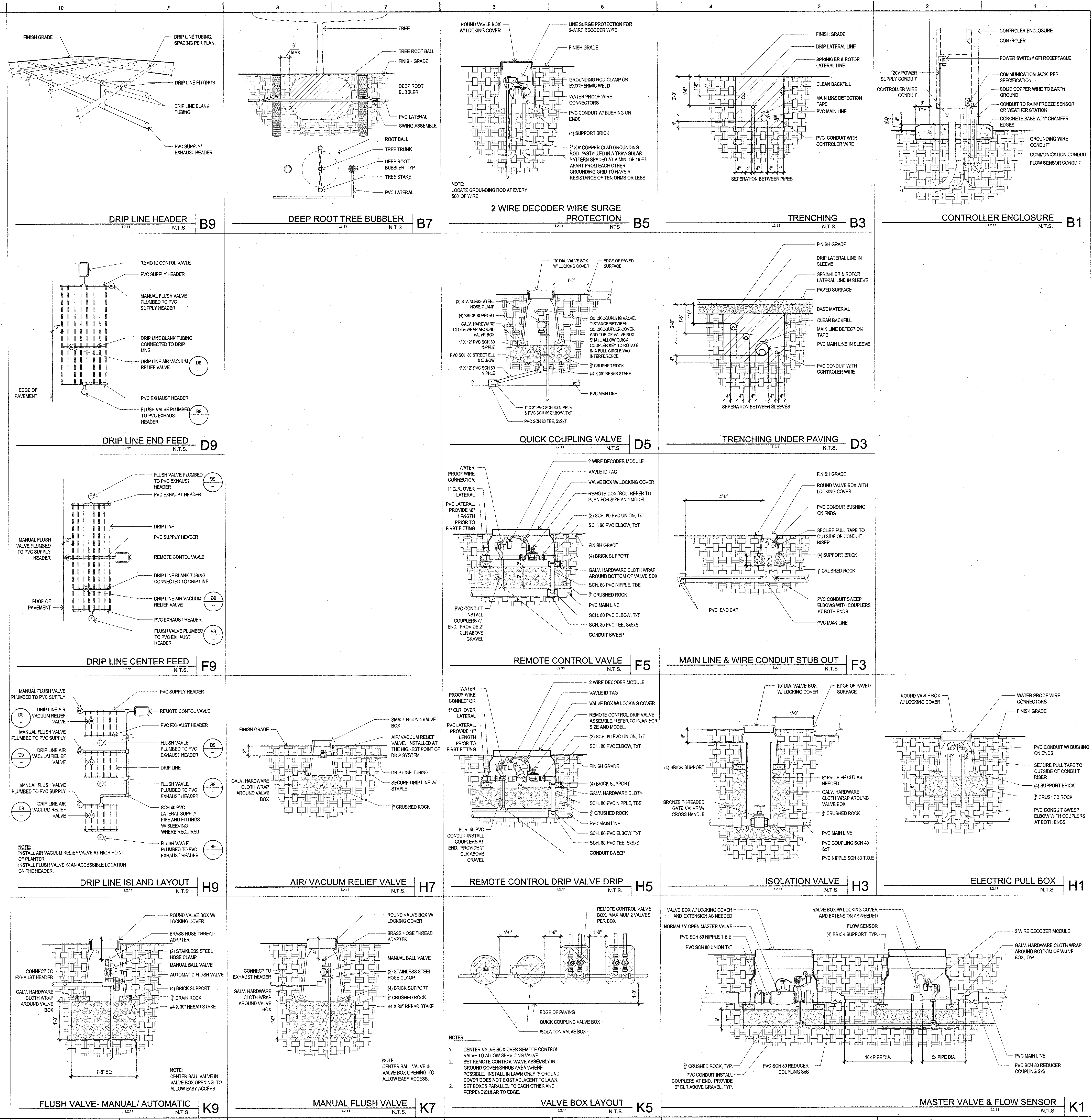
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## COLLEGE OF MARIN INDIAN VALLEY CAMPUS

ORGANIC FARM  
PARKING LOT IMPROVEMENTS  
MARIN, CA



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