BID MANUAL

BID NUMBER: 87

RED HILL COMMUNITY SPORTS PARK REMODEL

TAMALPAIS UNION HIGH SCHOOL DISTRICT

BIDS April 19, 2023

SEALS PAGE

DOCUMENT 00 01 02

REDHILL COMMUNITY SPORTS PARK RENOVATION

AT

REDHILL COMMUNITY PARK, SAN ANSELMO, CALIFORNIA

FOR

TAMALPAIS UNION HIGH SCHOOL DISTRICT

SCHOOL DISTRICT
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LICENSED LANDSCAPE ARCHITECT
WILLIAM E. FEE
2537
Bill Fee
Signature
12.31.2024
Renewal Date
01.20.2023
Date
STATE OF CALIFORNIA

Bill Fee
BY:__________________________________
William E. Fee, 2537

STRUCTURAL ENGINEER
DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE
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REGISTERED PROFESSIONAL ENGINEER
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No. S4613
STRUCTURAL
STATE OF CALIFORNIA

DOCUMENT 00 01 10

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END OF SECTION

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END OF DOCUMENT

DOCUMENT 00 11 16

NOTICE TO BIDDERS

1. Notice is hereby given that the governing board (“Board”) of the Tamalpais Union High School District (“District”) will receive sealed bids for the following project, **Bid No. 87** (“Project” or “Contract”):

   RED HILL COMMUNITY SPORTS PARK RENOVATION

2. The Project consists of:

   SITE IMPROVEMENTS CONSISTING OF: ACCESSIBLE ROUTE/RAMP/PARKING, AND ASSOCIATED APPURTENANCES

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

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

4. To bid on this Project, the Bidder is required to be registered as a public works contractor with the Department of Industrial Relations pursuant to the Labor Code.

5. Contract Documents will be available on or after March 22, 2023, for review at the District Corporation Yard office on 333 Doherty Drive in Larkspur, California and may be downloaded from the District’s website, **www.tamdistrict.org/Page/7986** , using the **“Notices Inviting Bids”** link.

6. Sealed bids will be received until **2:00 p.m., April 19, 2023**, at the District Facilities Office, 333 Doherty Drive, Larkspur, California 94977 at or after which time the bids will be opened and publicly read aloud. Any bid that is submitted after this time shall be nonresponsive and returned to the bidder. Any claim by a bidder of error in its bid must be made in compliance with section 5100 et seq. of the Public Contract Code.

7. All bids shall be on the form provided by the District. Each bid must conform and be responsive to all pertinent Contract Documents, including, but not limited to, the Instructions to Bidders.

8. A bid bond by an admitted surety insurer on the form provided by the District a cashier's check or a certified check, drawn to the order of the Tamalpais Union High School District, in the amount of ten percent (10%) of the total bid price, shall accompany the Bid Form and Proposal, as a guarantee that the Bidder will, within seven (7) calendar days after the date of the Notice of Award, enter into a contract with the District for the performance of the services as stipulated in the bid.

9. A mandatory pre-bid conference and site visit will be held on Wednesday, April 5, 2023, at 1 p.m. at 100 Shaw Drive, San Anselmo, California. All participants are required to sign in front of the Red Hill Community Sports Complex on Sunny Hills Drive in San Anselmo, California. The site visit is expected to take approximately ONE (1) hour. Failure to attend or tardiness will render bid ineligible.

10. The successful Bidder shall be required to furnish a 100% Performance Bond and a 100% Payment Bond if it is awarded the Contract for the Work.

11. Reserved.

12. The successful Bidder may substitute securities for any monies withheld by the District to ensure performance under the Contract, in accordance with the provisions of section 22300 of the Public Contract Code.

13. The successful bidder will be required to certify that it either meets the Disabled Veteran Business Enterprise ("DVBE") goal of three percent (3%) participation or made a good faith effort to solicit DVBE participation in this Contract if it is awarded the Contract for the Work.

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 section 1770 et seq. of the California Labor Code. Prevailing wage rates are also available from the District or on the Internet at: <http://www.dir.ca.gov>.

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 successful Bidder shall comply with all requirements of Division 2, Part 7, Chapter 1, Articles 1-5 of the Labor Code.

16. The Contractor and all Subcontractors under the Contractor shall comply with applicable federal, State, and local requirements relating to COVID-19 or other public health emergency/epidemic/pandemic including, if required, preparing, posting, and implementing a Social Distancing Protocol. Contractor shall further comply with the California Department of Public Health's August 11, 2021, Order requiring workers on District sites to be fully vaccinated against COVID-19, or else subject to weekly testing for COVID-19.

17. Reserved.

18. The District shall award the Contract, if it awards it at all, to the lowest responsive responsible bidder based on: **A. The base bid amount only.**

19. The Board reserves the right to reject any and all bids and/or waive any irregularity in any bid received. If the District awards the Contract, the security of unsuccessful bidder(s) shall be returned within sixty (60) days from the time the award is made. Unless otherwise required by law, no bidder may withdraw its bid for ninety (90) days after the date of the bid opening.

Tamalpais Union High School District
Publication Dates: (1) March 22, 2023 (2) March 29, 2023

END OF DOCUMENT

DOCUMENT 00 21 13

INSTRUCTIONS TO BIDDERS

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

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

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

   RED HILL COMMUNITY SPORTS PARK REMODEL

2. A Bidder and its subcontractors must possess the appropriate State of California contractors' license and must maintain the license throughout the duration of the project. Bidders must also be registered as a public works contractor with the Department of Industrial Relations pursuant to the Labor Code. Bids submitted by a contractor who is not properly licensed or registered shall be deemed nonresponsive and will not be considered.

3. The District has prequalified bidders pursuant to Public Contract Code section 20111.5. Only prequalified bidders will be eligible to submit a bid for this Project. Any bid submitted by a bidder who is not prequalified shall be deemed nonresponsive and will not be considered. **N/A**

4. District will receive sealed bids from bidders as stipulated in the Notice to Bidders.

   a. All bids must be sealed in an envelope, marked with the name and address of the Bidder, name of the Project, the Project Number and/or bid number, and time of bid opening.

   b. Bids must be submitted to the TUHSD Corporation Yard office on 333 Doherty Drive in Larkspur, California by date and time shown in the Notice to Bidders.

   c. Bids must contain all documents as required herein.

5. Bidders are advised that on the date that bids are opened, telephones will not be available at the District Offices for use by bidders or their representatives.

6. Bids will be opened at or after the time indicated for receipt of bids.

7. Bidders must submit bids on the documents titled Bid Form and Proposal, and must submit all other required District forms. Bids not submitted on the District's required forms shall be deemed nonresponsive and shall not be considered. Additional sheets required to fully respond to requested information are permissible.

8. Bidders shall not modify the Bid Form and Proposal or qualify their bids. Bidders shall not submit to the District a re-formatted, re-typed, altered, modified, or

otherwise recreated version of the Bid Form and Proposal or other District-provided document.

9. Bids shall be clearly written and without erasure or deletions. District reserves the right to reject any bid containing erasures, deletions, or illegible contents.

10. Bidders must supply all information required by each Bid Document. Bids must be full and complete. District reserves the right in its sole discretion to reject any bid as nonresponsive as a result of any error or omission in the bid. Bidders must complete and submit all of the following documents with the Bid Form and Proposal:

    a. Bid Bond on the District's form, or other security.

    b. Designated Subcontractors List.

    c. Site Visit Certification, if a site visit was required.

    d. Non-Collusion Declaration.

11. 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 ("Bid Bond"). If Bidder chooses to provide a Bid Bond as security, Bidder must use the required form of corporate surety provided by District. The Surety on Bidder's Bid Bond must be an insurer admitted in the State of California and authorized to issue surety bonds in the State of California. Bids submitted without necessary bid security will be deemed nonresponsive and will not be considered.

12. If Bidder to whom the Contract is awarded fails or neglects to enter into the Contract and submit required bonds, insurance certificates, and all other required documents, within **SEVEN (7)** calendar days after the date of the Notice of Award, District may deposit Bid Bond, 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.

13. Bidders must submit with the bid the Designated Subcontractors List for those subcontractors who will perform any portion of Work, including labor, rendering of service, or specially fabricating and installing a portion of the Work or improvement according to detailed drawings contained in the plans and specifications, in excess of one half of one percent (0.5%) of total bid. Failure to submit this list when required by law shall result in bid being deemed nonresponsive and the bid will not be considered.

14. All of the listed subcontractors are required to be registered as a public works contractor with the Department of Industrial Relations pursuant to the Labor Code.

a. An inadvertent error in listing the California contractor license number on the Designated Subcontractors List shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive if the correct contractor's license number is submitted to the District within 24 hours after the bid opening and the corrected number corresponds with the submitted name and location for that subcontractor.

b. An inadvertent error listing an unregistered subcontractor shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive provided that any of the following apply:

(1) The subcontractor is registered prior to the bid opening.

(2) The subcontractor is registered and has paid the penalty registration fee within 24 hours after the bid opening.

(3) The subcontractor is replaced by another registered subcontractor pursuant to Public Contract Code section 4107.

15. If a mandatory pre-bid conference and site visit ("Site Visit") is required as referenced in the Notice to Bidders, then Bidders must submit the Site Visit Certification with their Bid. District will transmit to all prospective Bidders of record such Addenda as District in its discretion considers necessary in response to questions arising at the Site Visit. Oral statements shall not be relied upon and will not be binding or legally effective. Addenda issued by the District as a result of the Site Visit, if any, shall constitute the sole and exclusive record and statement of the results of the Site Visit.

16. Bidders shall submit the Non-Collusion Declaration with their bids. Bids submitted without the Non-Collusion Declaration shall be deemed nonresponsive and will not be considered.

17. The Contractor and all Subcontractors under the Contractor shall pay all workers on all work performed pursuant to the Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to sections 1770 et seq. of the California Labor Code. Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by Director of the Department of Industrial Relations, are available upon request at the District's principal office. Prevailing wage rates are also available on the internet at http://www.dir.ca.gov.

18. Submission of bid signifies careful examination of Contract Documents and complete understanding of the nature, extent, and location of Work to be performed. Bidders must complete the tasks listed below as a condition to bidding, and submission of a bid shall constitute the Bidder's express representation to District that Bidder has fully completed the following:

a. Bidder has visited the Site, if required, and has examined thoroughly and understood the nature and extent of the Contract Documents, Work, Site, locality, actual conditions, as-built conditions, and all local conditions and federal, state and local laws, and regulations that in any manner may affect cost, progress, performance, or furnishing of Work or that relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto;

b. Bidder has conducted or obtained and has understood all examinations, investigations, explorations, tests, reports, and studies that pertain to the subsurface conditions, as-built conditions, underground facilities, and all other physical conditions at or contiguous to the Site or otherwise that may affect the cost, progress, performance, or furnishing of Work, as Bidder considers necessary for the performance or furnishing of Work at the Contract Sum, within the Contract Time, and in accordance with the other terms and conditions of Contract Documents, including specifically the provisions of the General Conditions; and no additional examinations, investigations, explorations, tests, reports, studies, or similar information or data are or will be required by Bidder for such purposes;

c. Bidder has correlated its knowledge and the results of all such observations, examinations, investigations, explorations, tests, reports, and studies with the terms and conditions of the Contract Documents;

d. Bidder has given the District prompt written notice of all conflicts, errors, ambiguities, or discrepancies that it has discovered in or among the Contract Documents and the actual conditions, and the written resolution(s) thereof by the District is/are acceptable to Bidder;

e. Bidder has made a complete disclosure in writing to the District of all facts bearing upon any possible interest, direct or indirect, that Bidder believes any representative of the District or other officer or employee of the District presently has or will have in this Contract or in the performance thereof or in any portion of the profits thereof;

f. Bidder must, prior to bidding, perform the work, investigations, research, and analysis required by this document and that Bidder represented in its Bid Form and Proposal and the Agreement that it performed prior to bidding. Contractor under this Contract is charged with all information and knowledge that a reasonable bidder would ascertain from having performed this required work, investigation, research, and analysis. Bid prices must include entire cost of all work "incidental" to completion of the Work.

g. Conditions Shown on the Contract Documents: Information as to underground conditions, as-built conditions, or other conditions or obstructions, indicated in the Contract Documents, e.g., on Drawings or in Specifications, has been obtained with reasonable care, and has been recorded in good faith. However, District only warrants, and Bidder may only rely, on the accuracy of limited types of information.

    (1) As to above-ground conditions or as-built conditions shown or indicated in the Contract Documents, there is no warranty, express or implied, or any representation express or implied, that such information is correctly shown or indicated. This information is verifiable by independent investigation and Bidder is required to make

such verification as a condition to bidding. In submitting its Bid, Bidder shall rely on the results of its own independent investigation. In submitting its Bid, Bidder shall not rely on District-supplied information regarding above-ground conditions or as-built conditions.

(2) As to any subsurface condition shown or indicated in the Contract Documents, Bidder may rely only upon the general accuracy of actual reported depths, actual reported character of materials, actual reported soil types, actual reported water conditions, or actual obstructions shown or indicated. District is not responsible for the completeness of such information for bidding or construction; nor is District responsible in any way for any conclusions or opinions that the Bidder has drawn from such information; nor is the District responsible for subsurface conditions that are not specifically shown (for example, District is not responsible for soil conditions in areas contiguous to areas where a subsurface condition is shown).

h. Conditions Shown in Reports and Drawings Supplied for Informational Purposes: Reference is made to the document entitled Geotechnical Data, and the document entitled Existing Conditions, for identification of:

(1) Subsurface Conditions: Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that have been utilized by Architect in preparing the Contract Documents; and

(2) Physical Conditions: Those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that has been utilized by Architect in preparing the Contract Documents.

(3) These reports and drawings are **not** Contract Documents and, except for any "technical" data regarding subsurface conditions specifically identified in Geotechnical Data and Existing Conditions, and underground facilities data, Bidder may not in any manner rely on the information in these reports and drawings. Subject to the foregoing, Bidder must make its own independent investigation of all conditions affecting the Work and must not rely on information provided by District.

19. Bids shall be based on products and systems specified in Contract Documents or listed by name in Addenda. Whenever in the Specifications any materials, process, or article is indicated or specified by grade, patent, or proprietary name, or by name of manufacturer, that Specification shall be deemed to be followed by the words "or equal." Bidder may, unless otherwise stated, offer any material, process, or article that shall be substantially equal or better in every respect to that so indicated or specified. The District is not responsible and/or liable in any way for a Contractor's damages and/or claims related, in any way, to that Contractor's basing its bid on any requested substitution that the District has not approved in advance and in writing. Contractors and materials suppliers who submit requests for substitutions prior to the award of the Contract must do so in writing and in compliance with Public Contract Code section 3400. All requests must comply with the following:

a. District must receive any notice of request for substitution of a specified item a minimum of **TEN (10)** calendar days prior to bid opening. The Successful Bidder will not be allowed to substitute specified items unless properly noticed.

b. Within 35 days after the date of the Notice of Award, the Successful Bidder shall submit data substantiating the request(s) for all substitution(s) containing sufficient information to assess acceptability of product or system and impact on Project, including, without limitation, the requirements specified in the Special Conditions and the Specifications. Insufficient information shall be grounds for rejection of substitution.

c. Approved substitutions, if any, shall be listed in Addenda. District reserves the right not to act upon submittals of substitutions until after bid opening.

d. Substitutions may be requested after Contract has been awarded only if indicated in and in accordance with requirements specified in the Special Conditions and the Specifications.

20. Bidders may examine any available "as-built" drawings of previous work by giving District reasonable advance notice. District will not be responsible for accuracy of "as-built" drawings. The document entitled Existing Conditions applies to all supplied "as-built" drawings.

21. All questions about the meaning or intent of the Contract Documents are to be directed via email to the District to David O'Connor (doconnor@tamdistrict.org) Interpretations or clarifications considered necessary by the District in response to such questions will be issued in writing by Addenda and 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.

22. Addenda may also be issued to modify other parts of the Contract Documents as deemed advisable by the District.

23. Each Bidder must acknowledge each Addendum in its Bid Form and Proposal by number or its Bid shall be considered non-responsive. Each Addendum shall be part of the Contract Documents. A complete listing of Addenda may be secured from the District.

24. This Contract may include alternates. Alternates are defined as alternate products, materials, equipment, systems, methods, or major elements of the construction that may, at the District's option and under terms established in the Contract and pursuant to section 20103.8 of the Public Contract Code, be selected for the Work.

25. The District shall award the Contract, if it awards it at all, to the lowest responsive responsible bidder based on the criteria as indicated in the Notice to Bidders. In the event two or more responsible bidders submit identical bids, the District shall select the Bidder to whom to award the Contract by lot.

26. Discrepancies between written words and figures, or words and numerals, will be resolved in favor of figures or numerals.

27. Bidders in contention for contract awards shall be required to attend a Post-Bid interview, which will be set within three (3) calendar days following bid opening. A duly authorized representative of the apparent low bidder is required to attend the Post Bid Interview, in person. The apparent low bidder's authorized representative(s) must have (1) knowledge of how the bid submitted was prepared, (2) the person responsible for supervising performance of the Work, and (3) the authority to bind the apparent low bidder. Failure to attend the Post Bid Interview as scheduled will be considered just cause for the District to reject the Bid as nonresponsive.

28. Any bid protest by any Bidder regarding any other bid must be submitted in writing to the District, before 5:00 p.m. of the **THIRD** **(3rd)** business day following bid opening.

    a. Only a Bidder who has actually submitted a bid, and who could be awarded the Contract if the bid protest is upheld, is eligible to submit a bid protest. Subcontractors are not eligible to submit bid protests. A Bidder may not rely on the bid protest submitted by another Bidder.

    b. A bid protest must contain a complete statement of any and all bases for the protest and all supporting documentation. Materials submitted after the bid protest deadline will not be considered.

    c. The protest must refer to the specific portions of all documents that form the basis for the protest.

        (1) Without limitation to any other basis for protest, an inadvertent error in listing the California contractor's license number on the Designated Subcontractors List shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive if the correct contractor's license number is submitted to the District within 24 hours after the bid opening and the corrected number corresponds with the submitted name and location for that subcontractor.

        (2) Without limitation to any other basis for protest, an inadvertent error listing an unregistered subcontractor shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive provided that any of the following apply:

            (i) The subcontractor is registered prior to the bid opening.

            (ii) The subcontractor is registered and has paid the penalty registration fee within 24 hours after the bid opening.

            (iii) The subcontractor is replaced by another registered subcontractor pursuant to Public Contract Code section 4107.

    d. The protest must include the name, address and telephone number of the person representing the protesting party.

e. The party filing the protest must concurrently transmit a copy of the protest and any attached documentation to all other parties with a direct financial interest that may be adversely affected by the outcome of the protest. Such parties shall include all other bidders or proposers who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.

f. The procedure and time limits set forth in this paragraph are mandatory and are each bidder’s sole and exclusive remedy in the event of bid protest. Failure to comply with these procedures shall constitute a waiver of any right to further pursue the bid protest, including filing a Government Code Claim or legal proceedings.

29. The Bidder to whom Contract is awarded shall execute and submit the following documents by 5:00 p.m. of the **SEVENTH (7th)** calendar day following the date of the Notice of Award. Failure to properly and timely submit these documents entitles District to reject the bid as nonresponsive.

a. Agreement: To be executed by 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 titled Escrow Bid Documentation for more information.

c. Performance Bond (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.

d. Payment Bond (Contractor's Labor and Material Bond) (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.

e. Insurance Certificates and Endorsements as required.

f. Workers’ Compensation Certification.

g. Prevailing Wage and Related Labor Requirements Certification.

h. Disabled Veteran Business Enterprise Participation Certification.

i. Drug-Free Workplace Certification.

j. Tobacco-Free Environment Certification.

k. Hazardous Materials Certification.

l. Lead-Based Materials Certification.

m. Imported Materials Certification.

n. Criminal Background Investigation/Fingerprinting Certification.

o. Registered Subcontractors List: Must include Department of Industrial Relations (DIR) registration number of each subcontractor for all tiers.

30. Time for Completion: District may issue a Notice to Proceed within **NINETY (90)** days from the date of the Notice of Award. Once Contractor has received the Notice to Proceed, Contractor shall complete the Work within the period of time indicated in the Contract Documents.

    a. In the event that the District desires to postpone issuing the Notice to Proceed beyond this 90-day period, it is expressly understood that with reasonable notice to the Contractor, the District may postpone issuing the Notice to Proceed.

    b. It is further expressly understood by Contractor that Contractor shall not be entitled to any claim of additional compensation as a result of the postponement of the issuance of the Notice to Proceed beyond a 90-day period. If the Contractor believes that a postponement of issuance of the Notice to Proceed will cause a hardship to the Contractor, the Contractor may terminate the Contract. Contractor's termination due to a postponement beyond this 90-day period shall be by written notice to District within **TEN (10)** calendar days after receipt by Contractor of District's notice of postponement.

    c. It is further understood by the Contractor that in the event that Contractor terminates the Contract as a result of postponement by the District, the District shall only be obligated to pay Contractor for the Work that Contractor had performed at the time of notification of postponement and which the District had in writing authorized Contractor to perform prior to issuing a Notice to Proceed.

    d. Should the Contractor terminate the Contract as a result of a notice of postponement, District shall have the authority to award the Contract to the next lowest responsive responsible bidder.

31. District reserves the right to reject any or all bids, including without limitation the right to reject any or all nonconforming, nonresponsive, unbalanced, or conditional bids, to re-bid, and to reject the bid of any bidder if District believes that it would not be in the best interest of the District to make an award to that bidder, whether because the bid is not responsive or the bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by District. District also reserves the right to waive any inconsequential deviations or irregularities in any bid. For purposes of this paragraph, an "unbalanced bid" is one having nominal prices for some work items and/or enhanced prices for other work items.

32. It is the policy of the District that no qualified person shall be excluded from participating in, be denied the benefits of, or otherwise be subjected to discrimination in any consideration leading to the award of contract, based on race, color, gender, sexual orientation, political affiliation, age, ancestry, religion, marital status, national origin, medical condition or disability. The Successful Bidder and its subcontractors shall comply with applicable federal and state laws, including, but not limited to the California Fair Employment and Housing Act, beginning with Government Code section 12900, and Labor Code section 1735.

33. 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.

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

END OF DOCUMENT

DOCUMENT 00 21 13.1

BIDDER INFORMATION AND FORMS

[INTENTIONALLY LEFT BLANK UNLESS PROVIDED IN SPECIAL CONDITIONS – SEPARATE PREQUALIFICATION PROCESS RECOMMENDED]

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 the Tamalpais Union High School District ("District"), its consultants, contractors, and tenants. These documents may, but are not required to, include previous contracts, contract specifications, tenant improvement contracts, as-built drawings, utility drawings, and information regarding underground facilities.

b. Information regarding existing conditions may be inspected at the District offices or the Construction Manager's offices, if any, and copies may be obtained at cost of reproduction and handling upon Bidder's agreement to pay for such copies. These reports, documents, and other information are **not** part of the Contract Documents. These reports, documents, and other information do **not** excuse Contractor from fulfilling Contractor's obligation to independently investigate any or all existing conditions or from using reasonable prudent measures to avoid damaging existing improvements.

c. Information regarding existing conditions may also be included in the Project Manual, but shall **not** be considered part of the Contract Documents.

d. Prior to commencing this Work, Contractor and the District's representative shall survey the Site to document the condition of the Site. Contractor will record the survey in digital videotape format and provide an electronic copy to the District within fourteen (14) days of the survey.

e. Contractor may also document any pre-existing conditions in writing, provided that both the Contractor and the District's representative agree on said conditions and sign a memorandum documenting the same.

f. The reports and other data or information regarding existing conditions and underground facilities at or contiguous to the Project are the following:

(1) Original Construction Drawings.
(2) Survey of Site.
(3) Geotechnical Report(s).
(4) Hazardous Material Report(s).
(5) Videotaped Survey(s).

3. Use of Information

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

b. District does not warrant, and makes no representation regarding, the accuracy or thoroughness of any information regarding existing conditions. Bidder represents and agrees that in submitting a bid it is not relying on any information regarding existing conditions supplied by District.

c. Under no circumstances shall District be deemed to warrant or represent existing above-ground conditions, as-built conditions, or other actual conditions, verifiable by independent investigation. These conditions are verifiable by Bidder by the performance of its own independent investigation that Bidder must perform as a condition to bidding and Bidder should not and shall not rely on this information or any other information supplied by District regarding existing conditions.

d. Any information shown or indicated in the reports and other data supplied herein with respect to existing underground facilities at or contiguous to the Project may be based upon information and data furnished to District by the District's employees and/or consultants or builders of such underground facilities or others. District does not assume responsibility for the completeness of this information, and Bidder is solely responsible for any interpretation or conclusion drawn from this information.

e. District shall be responsible only for the general accuracy of information regarding underground facilities, and only for those underground facilities that are owned by District, and only where Bidder has conducted the independent investigation required of it pursuant to the Instructions to Bidders, and discrepancies are not apparent.

4. Investigations/Site Examinations

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

b. On request, District will provide each Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies, as each Bidder deems necessary for submission of a bid. Bidders must fill all holes and clean up and restore the Site to its former condition upon completion of its explorations, investigations, tests, and studies. Such investigations and Site examinations may be performed during any and all Site visits indicated in the Notice to Bidders and only under the provisions of the Contract

Documents, including, but not limited to, proof of insurance and obligation to indemnify against claims arising from such work, and District's prior approval.

END OF DOCUMENT

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 and/or in connection with the Work by soil investigation engineers hired by Tamalpais Union High School District ("District"), and its consultants, contractors, and tenants.

b. Geotechnical reports may be inspected at the District's offices, 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 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.

d. The term "technical data" shall not include the location of underground facilities.

e. The reports and drawings of physical conditions that may relate to the Project include Geotechnical Design Recommendations, and have been prepared by Miller Pacific Engineering Group for the project entitled: Synthetic Turf Resurfacing, Redhill Community Park, San Anselmo, California, dated July 28, 2022 (Copies are in Appendix 'A' of the Project Manual)

3. Use of Data

a. Geotechnical data were obtained only for use of District and its consultants, contractors, and tenants for planning and design and are **not** a part of Contract Documents.

b. Except as expressly set forth below, District does not warrant, and makes no representation regarding, the accuracy or thoroughness of any geotechnical data. Bidder represents and agrees that in submitting a bid it is not relying on any geotechnical data supplied by District, except as specifically allowed below.

c. Under no circumstances shall District be deemed to make a warranty or representation of existing above ground conditions, as-built conditions, geotechnical conditions, or other actual conditions verifiable by independent investigation. These conditions are verifiable by Bidder by the performance of its own independent investigation that Bidder should perform as a condition to bidding and Bidder must not and shall not rely on information supplied by District.

4. Limited Reliance Permitted on Certain Information

a. Reference is made herein for identification of:

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

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

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

(1) The term "technical data" shall include actual reported depths, reported quantities, reported soil types, reported soil conditions, and reported material, equipment or structures that were encountered during subsurface exploration. The term "technical data" does not include, and Bidder may not rely upon, any other data, interpretations, opinions or information shown or indicated in such drawings or reports that otherwise relate to subsurface conditions or described structures.

(2) The term "technical data" shall not include the location of underground facilities.

(3) Bidder may not rely on the completeness of reports and drawings for the purposes of bidding or construction. Bidder may rely upon the general accuracy of the "technical data" contained in such reports or drawings.

(4) Bidder is solely responsible for any interpretation or conclusion drawn from any "technical data" or any other data, interpretations, opinions, or information provided in the identified reports and drawings.

5. Investigations/Site Examinations

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

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

END OF DOCUMENT

DOCUMENT 00 41 13

BID FORM AND PROPOSAL

To: Governing Board of the Tamalpais Union High School District ("District" or "Owner")

From: ____

(Proper Name of Bidder)

The undersigned declares that Bidder has read and understands the Contract Documents, including, without limitation, the Notice to Bidders and the Instructions to Bidders, and agrees and proposes to furnish all necessary labor, materials, and equipment to perform and furnish all work in accordance with the terms and conditions of the Contract Documents, including, without limitation, the Drawings and Specifications of Bid No. 87, for the following project known as:

RED HILL COMMUNITY SPORTS PARK REMODEL

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

________________________________	dollars	$ ______________
BASE BID		

1. 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.

2. 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.

3. 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.

4. The liquidated damages clause of the General Conditions and Agreement is hereby acknowledged.

5. 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.

6. The following documents are attached hereto:

   - Bid Bond on the District's form or other security
   - Designated Subcontractors List

- Site Visit Certification
- Non-Collusion Declaration

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

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

8. Bidder acknowledges that the license required for performance of the Work is an **A** or **B** license.

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

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

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

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

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

16. The undersigned Bidder certifies that it is, at the time of bidding, and shall be throughout the period of the Contract, licensed by the State of California to do the

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

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

Dated this ______________ day of ____ 2023

Name of Bidder: ____

Type of Organization: ____

Signature: ____

Print Name: ____

Title: ____

Address of Bidder: ____

Taxpayer Identification No. of Bidder: ____

Telephone Number: ____

Fax Number: ____

E-mail: ____________________________________ Web Page: ____________________________

Contractor's License No(s): No.: ____________ Class: __________ Expiration Date: _______

No.: ____________ Class:__________ Expiration Date: _______

No.: ____________ Class:__________ Expiration Date: _______

Public Works Contractor Registration No.: ____

END OF DOCUMENT

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 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 Tamalpais Union High School District ("District") of Marin County, State of California, as Obligee, in an amount equal to ten percent (10%) of the Base Bid plus alternates, in the sum of

____ Dollars ($ ______________)

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

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal has submitted a bid to the District for all Work specifically described in the accompanying bid for the following project: **RED HILL COMMUNITY SPORTS PARK REMODEL** ("Project" or "Contract").

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

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

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

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

IN WITNESS WHEREOF, this instrument has been duty executed by the Principal and Surety above named, on the ___________ day of ____________________________, 20___.

____
Principal

____
By

____
Surety

____
By

____
Name of California Agent of Surety

____
Address of California Agent of Surety

____
Telephone Number of California Agent of Surety

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

END OF DOCUMENT

DOCUMENT 00 43 36

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

PROJECT: **RED HILL COMMUNITY SPORTS PARK REMODEL**

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

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

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

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

Subcontractor Name: ____________________

CA Cont. Lic. #: ____________________ Location: ____________________

DIR Registration #: ____________________

Portion of Work: ____________________

Subcontractor Name: ____________________

CA Cont. Lic. #: ____________________ Location: ____________________

DIR Registration #: ____________________

Portion of Work: ____________________

Subcontractor Name: ____________________

CA Cont. Lic. #: ____________________ Location: ____________________

DIR Registration #: ____________________

Portion of Work: ____________________

Subcontractor Name: ______________________________

CA Cont. Lic. #: ______________________ Location: ____________

DIR Registration #: ______________________________

Portion of Work: ______________________________

Subcontractor Name: ______________________________

CA Cont. Lic. #: ______________________ Location: ____________

DIR Registration #: ______________________________

Portion of Work: ______________________________

Subcontractor Name: ______________________________

CA Cont. Lic. #: ______________________ Location: ____________

DIR Registration #: ______________________________

Portion of Work: ______________________________

Subcontractor Name: ______________________________

CA Cont. Lic. #: ______________________ Location: ____________

DIR Registration #: ______________________________

Portion of Work: ______________________________

Subcontractor Name: ______________________________

CA Cont. Lic. #: ______________________ Location: ____________

DIR Registration #: ______________________________

Portion of Work: ______________________________

Date: ______________________________

Proper Name of Bidder: ______________________________

Signature: ______________________________

Print Name: ______________________________

Title: ______________________________

END OF DOCUMENT

DOCUMENT 00 45 01

SITE VISIT CERTIFICATION

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

PROJECT: **RED HILL COMMUNITY SPORTS PARK REMODEL**

Check option that applies:

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

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

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

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

Date: ____

Proper Name of Bidder: ____

Signature: ____

Print Name: ____

Title: ____

END OF DOCUMENT

DOCUMENT 00 45 19

NON-COLLUSION DECLARATION
(Public Contract Code Section 7106)

The undersigned declares:

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

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

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

Date: ____

Proper Name of Bidder: ____

Signature: ____

Print Name: ____

Title: ____

END OF DOCUMENT

DOCUMENT 00 45 46.11

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

PROJECT/CONTRACT NO.: **87** between Tamalpais Union High School District ("District") and ____ ("Contractor" or "Bidder") ("Contract" or "Project").

Prior to bidding on or submitting a proposal for a contract for goods or services of $1,000,000 or more to the District, the Bidder must either: a) certify it is **not** on the current list of persons engaged in investment activities in Iran created by the California Department of General Services ("DGS") pursuant to Public Contract Code section 2203(b) and is not a financial institution extending twenty million dollars ($20,000,000) or more in credit to another person, for 45 days or more, if that other person will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS; or b) demonstrate it has been exempted from the certification requirement for that solicitation or contract pursuant to Public Contract Code section 2203(c) or (d).

To comply with this requirement, please insert your vendor or financial institution name and Federal ID Number (if available) and complete **one** of the options below. Please note: California law establishes penalties for providing false certifications, including civil penalties equal to the greater of $250,000 or twice the amount of the contract for which the false certification was made; contract termination; and three-year ineligibility to bid on contracts. (Public Contract Code section 2205.)

OPTION #1 - CERTIFICATION

I, the official named below, certify I am duly authorized to execute this certification on behalf of the vendor/financial institution identified below, and the vendor/financial institution identified below is **not** on the current list of persons engaged in investment activities in Iran created by DGS and is not a financial institution extending twenty million dollars ($20,000,000) or more in credit to another person/vendor, for 45 days or more, if that other person/vendor will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS.

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

OPTION #2 – EXEMPTION

Pursuant to Public Contract Code sections 2203(c) and (d), a public entity may permit a vendor/financial institution engaged in investment activities in Iran, on a case-by-case basis, to be eligible for, or to bid on, submit a proposal for, or to enter into or to renew, a contract for goods and services.

If you have obtained an exemption from the certification requirement under the Iran Contracting Act, please fill out the information below, and attach documentation demonstrating the exemption approval.

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

END OF DOCUMENT

DOCUMENT 00 45 26

WORKERS' COMPENSATION CERTIFICATION

Bid NO.: **87** between the Tamalpais Union High School District ("District") and ___________ ______________________________ ("Contractor" or "Bidder") ("Contract" or "Project").

Labor Code section 3700, in relevant part, provides:

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

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

Date: ____

Proper Name of Contractor: ____

Signature: ____

Print Name: ____

Title: ____

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

END OF DOCUMENT

DOCUMENT 00 45 46.01

PREVAILING WAGE AND RELATED LABOR REQUIREMENTS CERTIFICATION

BID NO.: **87** between the Tamalpais Union High School District ("District") and ___________ ____ ("Contractor" or "Bidder") ("Contract" or "Project").

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

Date: ____

Proper Name of Contractor: ____

Signature: ____

Print Name: ____

Title: ____

END OF DOCUMENT

DOCUMENT 00 45 46.02

DISABLED VETERAN BUSINESS ENTERPRISE PARTICIPATION CERTIFICATION

BID NO.: **87** between the Tamalpais Union High School District (“District”) and __________ ___________________________________ (“Contractor” or “Bidder”) (“Contract” or “Project”).

GENERAL INSTRUCTIONS

Section 17076.11 of the Education Code requires school districts using, or planning to use, funds allocated pursuant to the State of California School Facility Program (“Program”) for the construction and/or modernization of school buildings to have a participation goal for disabled veteran business enterprises (“DVBE”) of at least three percent (3%) per year of the overall dollar amount expended each year by the school district on projects that receive state funding. Therefore, the lowest responsive responsible Bidder awarded the Contract must submit this document to the District with its executed Agreement, identifying the steps contractor took to solicit DVBE participation in conjunction with this Contract. **Do not submit this form with your bids.**

PART I – Method of Compliance with DVBE Participation Goals. Check the appropriate box to indicate your method of committing the contract dollar amount.

YOUR BUSINESS ENTERPRISE IS:	**AND YOU WILL**	**AND YOU WILL**
A. ☐ Disabled veteran owned and your forces will perform at least 3% of this Contract	Include a copy of your DVBE letter from Office of Small Business and Disabled Veterans Business Enterprise Services (“OSDS”)*	Complete Part 1 of this form and the Certification
B. ☐ Disabled veteran owned but is unable to perform 3% of this Contract with your forces	Use DVBE subcontractors /suppliers to bring the Contract participation to at least 3%	Include a copy of each DVBE’s letter from OSDS (including yours, if applicable), and complete Part 1 of this form and the Certification
C. ☐ **NOT** disabled veteran owned	Use DVBE subcontractors /suppliers for at least 3% of this Contract	
D. ☐ Unable to meet the required participation goals after good faith efforts	Make good faith efforts, including contacts, advertisement and DVBE solicitation	Complete all of this form and the Certification

* A DVBE letter from OSDS is obtained from the participating DVBE.

You must complete the following table to show the dollar amount of DVBE participation:

	TOTAL CONTRACT PRICE
A. Prime Bidder, if DVBE (own participation)	$
B. DVBE Subcontractor or Supplier	
1.	
2.	
3.	
4.	
C. Subtotal (A & B)	
D. Non-DVBE	
E. Total Bid	

PART II – Contacts. To identify DVBE subcontractors/suppliers for participation in your contract, you must contact each of the following categories. You should contact several DVBE organizations.

CATEGORY	**TELEPHONE NUMBER**	**DATE CONTACTED**	**PERSON CONTACTED**
1. The District, if any			*
2. OSDS, provides assistance locating DVBEs at https://caleprocure.ca.gov/pages/PublicSearch/supplier-search.aspx	(916) 375-4940		*
3. DVBE Organization (List)			*

*Write "recorded message" in this column, if applicable.

PART III – Advertisement. You must advertise for DVBE participation in both a trade and focus paper. List the advertisement you place to solicit DVBE participation. Advertisements should be published at least fourteen (14) days prior to bid/proposal opening; if you cannot advertise fourteen (14) days prior, advertisements should be published as soon as possible. Advertisements must include that your firm is seeking DVBE participation, the project name and location, and your firm's name, your contact person, and telephone number. Attach copies of advertisements to this form.

FOCUS/TRADE PAPER NAME	**CHECK ONE**		**DATE OF ADVERTISEMENT**
	TRADE	**FOCUS**	

PART IV – DVBE Solicitations. List DVBE subcontractors/suppliers that were invited to bid. Use the following instructions to complete the remainder of this section (read the three columns as a sentence from left to right). If you need additional space to list DVBE solicitations, please use a separate page and attach to this form.

IF THE DVBE.....	**THEN.....**	**AND.....**
was selected to participate	Check "YES" in the "SELECTED" column	include a copy of their DVBE letter(s) from OSDS
was **NOT** selected to participate	Check "NO" in the "SELECTED" column	state why in the "REASON NOT SELECTED" column
did not respond to your solicitation	Check the "NO RESPONSE" column.	

DVBE CONTACTED	**SELECTED**		**REASON NOT SELECTED**	**NO RESPONSE**
	YES	**NO**		

A copy of this form must be retained by you and may be subject to a future audit.

CERTIFICATION

I, ___________________________________, certify that I am the bidder's ________________ and that I have made a diligent effort to ascertain the facts with regard to the representations made herein. In making this certification, I am aware of section 12650 et seq. of the Government Code providing for the imposition of treble damages for making false claims.

Date: ____

Proper Name of Contractor: ____

Signature: ____

Print Name: ____

Title: ____

END OF DOCUMENT

DOCUMENT 00 45 46.03

DRUG-FREE WORKPLACE CERTIFICATION

BID NO.: **87** between the Tamalpais Union High School District ("District") and __________ ______________________________________ ("Contractor" or "Bidder") ("Contract" or "Project").

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

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

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

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

a. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in the person's or organization's workplace and specifying actions which will be taken against employees for violations of the prohibition.

b. Establishing a drug-free awareness program to inform employees about all of the following:

    (1) The dangers of drug abuse in the workplace.

    (2) The person's or organization's policy of maintaining a drug-free workplace.

    (3) The availability of drug counseling, rehabilitation, and employee-assistance programs.

    (4) The penalties that may be imposed upon employees for drug abuse violations.

c. Requiring that each employee engaged in the performance of the contract or grant be given a copy of the statement required above, and that, as a condition of employment on the contract or grant, the employee agrees to abide by the terms of the statement.

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

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

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

Date: ______________________________

Proper Name of Contractor: ______________________________

Signature: ______________________________

Print Name: ______________________________

Title: ______________________________

END OF DOCUMENT

DOCUMENT 00 45 46.04

TOBACCO-FREE ENVIRONMENT CERTIFICATION

BID NO.: **87** between the Tamalpais Union High School District ("District") and ___________ ____ ("Contractor" or "Bidder") ("Contract" or "Project").

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

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

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

Date: ____

Proper Name of Contractor: ____

Signature: ____

Print Name: ____

Title: ____

END OF DOCUMENT

DOCUMENT 00 45 46.05

HAZARDOUS MATERIALS CERTIFICATION

BID NO.: **87** between Tamalpais Union High School District ("District") and ______________ __________________________________ ("Contractor" or "Bidder") ("Contract" or "Project").

1. Contractor hereby certifies that no asbestos, or asbestos-containing materials, polychlorinated biphenyl (PCB), or any material listed by the federal or state Environmental Protection Agency or federal or state health agencies as a hazardous material, or any other material defined as being hazardous under federal or state laws, rules, or regulations, ("New Hazardous Material"), shall be furnished, installed, or incorporated in any way into the Project or in any tools, devices, clothing, or equipment used to affect any portion of Contractor's work on the Project for District.

2. Contractor further certifies that it has instructed its employees with respect to the above-mentioned standards, hazards, risks, and liabilities.

3. Asbestos and/or asbestos-containing material shall be defined as all items containing but not limited to chrysotile, crocidolite, amosite, anthophyllite, tremolite, and actinolite. Any or all material containing greater than one-tenth of one percent (0.1%) asbestos shall be defined as asbestos-containing material.

4. Any disputes involving the question of whether or not material is New Hazardous Material shall be settled by electron microscopy or other appropriate and recognized testing procedure, at the District's determination. The costs of any such tests shall be paid by Contractor if the material is found to be New Hazardous Material.

5. All Work or materials found to be New Hazardous Material or Work or material installed with equipment containing New Hazardous Material will be immediately rejected and this Work will be removed at Contractor's expense at no additional cost to the District.

6. Contractor has read and understood the document titled Hazardous Materials Procedures & Requirements, and shall comply with all the provisions outlined therein. Contractor certifies that it is knowledgeable of, and shall comply with, all laws applicable to the Work including, but not limited to, all federal, state, and local laws, statutes, standards, rules, regulations, and ordinances applicable to the Work.

Date: ____

Proper Name of Contractor: ____

Signature: ____

Print Name: ____

Title: ____

END OF DOCUMENT

DOCUMENT 00 45 46.06

LEAD-BASED MATERIALS CERTIFICATION

BID NO.: **87** between the Tamalpais Union High School 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 disburses when paint chips, chalks, peels, wears away over time, or is otherwise disturbed. Ingestion of lead dust is the most common pathway of childhood poisoning; lead dust gets on a child's hands and toys and then into a child's mouth through common hand-to-mouth activity. Exposures may result from construction or remodeling activities that disturb lead paint, from ordinary wear and tear of windows and doors, or from friction on other surfaces.

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

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

2. Overview of California Law

Education Code section 32240 et seq. is known as the Lead-Safe Schools Protection Act. Under this act, the Department of Health Services is to conduct a sample survey of schools in the State of California for the purpose of developing risk factors to predict lead contamination in public schools. (Ed. Code, § 32241.)

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

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

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

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

BID NO.: **87** between the Tamalpais Union High School District (“District”) and ___________ ____ (“Contractor” or “Bidder”) (“Contract” or “Project”).

This form shall be executed by all entities that, in any way, provide or deliver and/or supply any soils, aggregate, or related materials (“Fill”) to the Project Site and shall be provided to the District at least ten (10) days before delivery. All Fill shall satisfy all requirements of any environmental review of the Project performed pursuant to the statutes and guidelines of the California Environmental Quality Act, section 21000 et seq. of the Public Resources Code (“CEQA”), and all requirements of section 17210 et seq. of the Education Code, including requirements for a Phase I environmental assessment acceptable to the State of California Department of Education and Department of Toxic Substances Control.

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

Type of Entity
☐ Corporation
☐ Limited Partnership
☐ Sole Proprietorship
☐ General Partnership
☐ Limited Liability Company
☐ 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

CRIMINAL BACKGROUND INVESTIGATION /FINGERPRINTING CERTIFICATION

BID NO.: **87** between the Tamalpais Union High School District ("District") and ____ ("Contractor" or "Bidder") ("Contract" or "Project").

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

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

☐ Pursuant to Education Code section 45125.2(a), Contractor has installed or will install, prior to commencement of Work, a physical barrier at the Work Site, that will limit contact between Contractor's employees, Subcontractors or suppliers and District pupils at all times; and/or

☐ Pursuant to Education Code section 45125.2(a), Contractor certifies that all employees will be under the continual supervision of, and monitored by, an employee of the Contractor who the California Department of Justice ("DOJ") has ascertained, or as described below, will ascertain, has not been convicted of a violent or serious felony. The name and title of the employee who will be supervising Contractor's and its subcontractors' or suppliers' employees is:

Name: ____

Title: ____

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

☐ Pursuant to Education Code section 45125.2(a), the District will take appropriate steps to protect the safety of any pupils that may come in contact with Contractor's employees, subcontractors or suppliers so that the fingerprinting and criminal background investigation requirements of Education Code section 45125.2 shall not apply to Contractor under the Contract.

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

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

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

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

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

[CONTINUED ON NEXT PAGE]

ATTACHMENT "A"

List of Employees/Subcontractors

Name/Company: ____

Name/Company: ____

Name/Company: ____

Name/Company: ____

Name/Company: ____

Name/Company: ____

Name/Company: ____

Name/Company: ____

Name/Company: ____

Name/Company: ____

Name/Company: ____

Name/Company: ____

Name/Company: ____

Name/Company: ____

Name/Company: ____

Name/Company: ____

Name/Company: ____

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

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

END OF DOCUMENT

DOCUMENT 00 45 49

REGISTERED SUBCONTRACTORS LIST
(Labor Code Section 1771.1)

PROJECT: **RED HILL COMMUNITY SPORTS PARK REMODEL**

Date Submitted (for Updates): ____

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

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

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

Subcontractor Name: ____

DIR Registration #: ____

Portion of Work: ____

Subcontractor Name: ____

DIR Registration #: ____

Portion of Work: ____

Subcontractor Name: ____

DIR Registration #: ____

Portion of Work: ____

Subcontractor Name: ____

DIR Registration #: ____

Portion of Work: ____

Subcontractor Name: ____

DIR Registration #: ____

Portion of Work: ____

Subcontractor Name: ______________________________

DIR Registration #: ______________________________

Portion of Work: ______________________________

Subcontractor Name: ______________________________

DIR Registration #: ______________________________

Portion of Work: ______________________________

Subcontractor Name: ______________________________

DIR Registration #: ______________________________

Portion of Work: ______________________________

Subcontractor Name: ______________________________

DIR Registration #: ______________________________

Portion of Work: ______________________________

Subcontractor Name: ______________________________

DIR Registration #: ______________________________

Portion of Work: ______________________________

Subcontractor Name: ______________________________

DIR Registration #: ______________________________

Portion of Work: ______________________________

Subcontractor Name: ______________________________

DIR Registration #: ______________________________

Portion of Work: ______________________________

Date: ______________________________

Name of Contractor: ______________________________

Signature: ______________________________

Print Name: ______________________________

Title: ______________________________

END OF DOCUMENT

DOCUMENT 00 45 90

POST BID INTERVIEW

PART 1 – GENERAL

1.01 SUMMARY

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

1.02 REQUIRED ATTENDANCE

A. A duly authorized representative of the apparent low bidder is required to attend the Post Bid Interview, in person.

B. The apparent low bidder's authorized representative(s) must have (1) knowledge of how the bid submitted was prepared, (2) the person responsible for supervising performance of the Work, and (3) the authority to bind the apparent low bidder.

C. Failure to attend the Post Bid Interview as scheduled will be considered just cause for the District to reject the Bid as nonresponsive.

1.03 POST BID INTERVIEW PROCEDURE

A. The Construction Manager will review the Bid with the attendees.

B. The Construction Manager will review the Contract Documents with the attendees, including but not limited to:

  (1) Insurance

  (2) Bonding

  (3) Addenda

  (4) Pre-Bid Clarifications

  (5) Scope of Work

  (6) Bid Packages Descriptions

  (7) Bid Alternates

  (8) Contract Plans

  (9) Contract Specifications

  (10) Project Schedule and Schedule Requirements

(11) Critical Dates Requirement for Other Bid Packages

(12) Prevailing Wage Requirements

(13) Liquidated Damages

(14) Required Documentation for Contract Administration

(15) Contract Coordination Requirements

1.04 POST BID INTERVIEW DOCUMENTATION

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

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

POST BID INTERVIEW

CONSTRUCTION MANAGER

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

BIDDER: ____________________

DATE: __________ TIME: __________ PHONE: __________

I. INTRODUCTIONS:

A. Present

____________________	____________________
CONTRACTOR	CONTRACTOR
____________________	____________________
____________________	____________________
[CM]	[CM]

II. PROPOSED CONTRACT:

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

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

IV. CONTRACTUAL REQUIREMENTS:

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

C. Will you provide the Performance Bond and Labor and Material Bond for 100% of the Contract Price as stipulated? Yes No

   1. Cost for bonds: ____________% Yes No

   2. Is the cost of your bonds in your base bid? Yes No

   3. Is your surety licensed to issue bonds in California? Yes No

D. Do you understand the fingerprinting requirements? Yes No

E. Is it understood that all workers must be paid prevailing wage? Yes No

F. Is it understood that all subcontractors of every tier must be registered as a public works contractor with the Department of Industrial Relations? Yes No

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. ____

   ____

Is (are) there additional cost(s) for the above item(s)? Yes No

E. Is the cost for allowance included in your bid? Yes No

F. Have you reviewed bid alternative(s) #1-___? (if applicable) Yes No

G. Are the costs for bid alternatives included in your bid? Yes No

H. Are the plans and specifications clear and understandable to your satisfaction? Yes No

I. Do you acknowledge that the time to submit notice of requests for substitution of specified materials has expired? Yes No

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 of the Notice to Proceed, per the contract? Yes No

2. Can you meet the submittal deadline? Yes No

3. It is understood that the Project schedule is critical and that that weekend and overtime work may be required to meet the milestones. Yes No

4. It is understood that if rain does occur, then all dewatering and protection of work is required, per the contract. Yes No
If not, what do you believe must change and why? ________________________________

____

____

B. Identify critical materials, deliveries, long lead items and other dependencies, including Owner Furnished items that could affect the completion of your work. Yes No

1. ____

2. ____

3. ____

4. ____

5. ____

C. Do you understand that there is going to be maintenance and other construction taking place on site during the course of the project? Yes No

VII. EXECUTION OF WORK

A. Do you understand the access to the site? Yes No

B. Do you understand the staging area restrictions? Yes No

C. Have you included protection of [asphalt, floors, and roofs]? Yes No

D. Do you understand that the site is occupied by students, teachers, administrators, parents, etc.? Yes No

VIII. CONTRACTOR COMMENTS/SUGGESTIONS:

1. ______________________________

2. ______________________________

3. ______________________________

4. ______________________________

5. ______________________________

IX. 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: ______________________

X. 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: ________________________ 2023

To: ____ (Contractor)

____
(Address)

From: Governing Board ("Board") of the Tamalpais Union High School District ("District")

Re: **RED HILL COMMUNITY SPORTS PARK REMODEL**, Project No. **87** ("Project").

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

The Contract Price is ___________________________________ Dollars ($_________).

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

a. Agreement: To be executed by successful Bidder. Submit three (3) copies, each bearing an original signature.

b. Escrow of Bid Documentation: This must include all required documentation. See the document titled Escrow Bid Documentation for more information.

c. Performance Bond (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.

d. Payment Bond (Contractor's Labor & Material Bond) (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.

e. Insurance Certificates and Endorsements as required.

f. Workers' Compensation Certification.

g. Prevailing Wage and Related Labor Requirements Certification.

h. Disabled Veteran Business Enterprise Participation Certification.

i. Drug-Free Workplace Certification.

j. Tobacco-Free Environment Certification.

k. Hazardous Materials Certification.

l. Lead-Based Materials Certification.

m. Imported Materials Certification.

n. Criminal Background Investigation/Fingerprinting Certification.

o. COVID-19 Vaccination/Testing 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.

TAMALPAIS UNION HIGH SCHOOL DISTRICT

BY: ______________________________

NAME: ____________________________

TITLE: ____________________________

END OF DOCUMENT

DOCUMENT 00 52 13

AGREEMENT

THIS AGREEMENT IS MADE AND ENTERED INTO THIS ________ DAY OF __________ ______, 2023, by and between the Tamalpais Union High School District ("District") and ___ ____ ("Contractor") ("Agreement").

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

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

RED HILL COMMUNITY SPORTS PARK REMODEL

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

2. **The Contract Documents**: The complete Contract consists of all Contract Documents as defined in the General Conditions and incorporated herein by this reference. Any and all obligations of the District and Contractor are fully set forth and described in the Contract Documents. All Contract Documents are intended to cooperate so that any Work called for in one and not mentioned in the other or vice versa is to be executed the same as if mentioned in all Contract Documents.

3. **Interpretation of Contract Documents**: Should any question arise concerning the intent or meaning of Contract Documents, including the Drawings or Specifications, the question shall be submitted to the District for interpretation. If a conflict exists in the Contract Documents, valid, written modifications, beginning with the most recent, shall control over this Agreement (if any), which shall control over the Special Conditions, which shall control over any Supplemental Conditions, which shall control over the General Conditions, which shall control over the remaining Division 0 documents, which shall control over Division 1 Documents which shall control over Division 2 through Division 49 documents, which shall control over figured dimensions, which shall control over large-scale drawings, which shall control over small-scale drawings. In the case of a discrepancy or ambiguity solely between and among the Drawings and Specifications, the discrepancy or ambiguity shall be resolved in favor of the interpretation that will provide District with the functionally complete and operable Project described in the Drawings and Specifications. In no case shall a document calling for lower quality and/or quantity material or workmanship control. The decision of the District in the matter shall be final.

4. **Time for Completion**: It is hereby understood and agreed that the Work under this Contract shall be completed within Fifty-Six (56) consecutive calendar days (“Contract Time”) from the date specified in the District's Notice to Proceed.

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

6. **Liquidated Damages**: Time is of the essence for all work under this Agreement. It is hereby understood and agreed that it is and will be difficult and/or impossible to ascertain and determine the actual damage that the District will sustain in the event of and by reason of Contractor's delay; therefore, Contractor agrees that it shall pay to the District the sum of One Thousand Dollars ($1,000.00) per calendar day as liquidated damages for each and every day's delay beyond the time herein prescribed in completion of the Work.

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

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

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

7. **Loss Or Damage**: The District and its agents and authorized representatives shall not in any way or manner be answerable or suffer loss, damage, expense, or liability for any loss or damage that may happen to the Work, or any part thereof, or in or about the same during its construction and before acceptance, and the Contractor shall assume all liabilities of every kind or nature arising from the Work, either by accident, negligence, theft, vandalism, or any cause whatsoever; and shall hold the District and its agents and authorized representatives harmless from all liability of every kind and nature arising from accident, negligence, or any cause whatsoever.

8. **Limitation Of District Liability:** District’s financial obligations under this Contract shall be limited to the payment of the compensation provided in this Contract. Notwithstanding any other provision of this Contract, in no event shall District be liable, regardless of whether any claim is based on contract or tort, for any special, consequential, indirect or incidental damages, including, but not limited to, lost profits or revenue, lost bonding capacity, arising out of or in connection with this Contract for the services performed in connection with this Contract.

9. **Insurance and Bonds**: Prior to issuance of the Notice to Proceed by the District, Contractor shall provide all required certificates of insurance, insurance endorsements, and payment and performance bonds as evidence thereof.

10. **Prosecution of Work**: If the Contractor should neglect to prosecute the Work properly or fail to perform any provisions of this Contract, the District, may, pursuant to the General Conditions and without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

11. **Authority of Architect, Project Inspector, and DSA**: Contractor hereby acknowledges that the Architect(s), the Project Inspector(s), and the Division of the State Architect ("DSA") have authority to approve and/or suspend Work if the Contractor's Work does not comply with the requirements of the Contract Documents, Title 24 of the California Code of Regulations, and all applicable laws and regulations. The Contractor shall be liable for any delay caused by its non-compliant Work.

12. **Assignment of Contract**: Neither the Contract, nor any part thereof, nor any moneys due or to become due thereunder, may be assigned by the Contractor without the prior written approval of the District, nor without the written consent of the Surety on the Contractor's Performance Bond (the "Surety"), unless the Surety has waived in writing its right to notice of assignment.

13. **Classification of Contractor's License**: Contractor hereby acknowledges that it currently holds valid Type A or B Contractor's license(s) issued by the State of California, Contractors' State License Board, in accordance with division 3, chapter 9, of the Business and Professions Code and in the classification called for in the Contract Documents.

14. **Registration as Public Works Contractor**: The Contractor and all Subcontractors currently are registered as public works contractors with the Department of Industrial Relations, State of California, in accordance with Labor Code section 1771.1.

15. **Payment of Prevailing Wages**: The Contractor and all Subcontractors shall pay all workers on all Work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to sections 1770 et seq. of the California Labor Code. The Contractor and all Subcontractors shall comply with the Davis Bacon Act, applicable reporting requirements, and any other applicable requirements for federal funding. If a conflict exists, the more stringent provision shall control over this Agreement.

16. **Labor Compliance Monitoring and Enforcement**: This Project is subject to labor compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code section 1771.4 and Title 8 of the California Code of Regulations. Contractor specifically acknowledges and understands that it shall perform the Work of this Agreement while complying with all the applicable provisions of Division 2, Part 7, Chapter 1, of the Labor Code, including, without limitation, the requirement that the Contractor and all of its Subcontractors shall

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

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

____ Dollars

($_____________________________),

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

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

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

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

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

[SIGNATURES ON FOLLOWING PAGE]

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

[CONTRACTOR NAME]	**TAMALPAIS UNION HIGH SCHOOL 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: ______________________________, 2023

TO: ________________________________
("Contractor")

ADDRESS: ____

PROJECT: **RED HILL COMMUNITY SPORTS PARK REMODEL**

BID NO.: **87** between the Tamalpais Union High School District and Contractor ("Contract").

You are notified that the Contract Time under the above Contract will commence to run on ________________________, 2023. By that date, you are to start performing your obligations under the Contract Documents. In accordance with the Agreement executed by Contractor, the date of completion is ________________, 20___.

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

a. Contractor's preliminary schedule of construction.

b. Contractor's preliminary schedule of values for all of the Work.

c. Contractor's preliminary schedule of submittals, including Shop Drawings, Product Data, and Samples submittals

d. Contractor's Safety Plan specifically adapted for the Project.

e. Registered Subcontractors List: A complete subcontractors list for all tiers, including the name, address, telephone number, email address, facsimile number, California State Contractors License number, license classification, Department of Industrial Relations registration number, and monetary value of all Subcontracts.

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

TAMALPAIS UNION HIGH SCHOOL DISTRICT

BY: ________________________________

NAME: ______________________________

TITLE: ______________________________

END OF DOCUMENT

DOCUMENT 00 56 00

ESCROW BID DOCUMENTATION

1. Requirement to Escrow Bid Documentation

a. Contractor shall submit, within **SEVEN (7)** calendar days after the date of the Notice of Award, one copy of all documentary information received or generated by Contractor in preparation of bid prices for this Contract, as specified herein. This material is referred to herein as "Escrow Bid Documentation." The Escrow Bid Documentation of the Contractor will be held in escrow for the duration of the Contract.

b. Contractor agrees, as a condition of award of the Contract, that the Escrow Bid Documentation constitutes all written information used in the preparation of its bid, and that no other written bid preparation information shall be considered in resolving disputes or claims. Contractor also agrees that nothing in the Escrow Bid Documentation shall change or modify the terms or conditions of the Contract Documents.

c. The Escrow Bid Documentation will not be opened by District except as indicated herein. The Escrow Bid Documentation will be used only for the resolution of change orders and claims disputes.

d. Contractor's submission of the Escrow Bid Documentation, as with the bonds and insurance documents required, is considered an essential part of the Contract award. Should the Contractor fail to make the submission within the allowed time specified above, District may deem the Contractor to have failed to enter into the Contract, and the Contractor shall forfeit the amount of its bid security, accompanying the Contractor's bid, and District may award the Contract to the next lowest responsive responsible bidder.

e. NO PAYMENTS WILL BE MADE, NOR WILL DISTRICT ACCEPT PROPOSED CHANGE ORDERS UNTIL THE ABOVE REQUIRED INFORMATION IS SUBMITTED AND APPROVED.

f. The Escrow Bid Documentation shall be submitted in person by an authorized representative of the Contractor to the District.

2. Ownership of Escrow Bid Documentation

a. The Escrow Bid Documentation is, and shall always remain, the property of Contractor, subject to review by District, as provided herein.

b. Escrow Bid Documentation constitute trade secrets, not known outside Contractor's business, known only to a limited extent and only by a limited number of employees of Contractor, safeguarded while in Contractor's possession, extremely valuable to Contractor, and could be extremely valuable to Contractor's competitors by virtue of reflecting Contractor's contemplated techniques of construction. Subject to the provisions herein, District agrees to safeguard the Escrow Bid Documentation, and all information contained therein, against disclosure to the fullest extent permitted by law.

3. Format and Contents of Escrow Bid Documentation

a. Contractor may submit Escrow Bid Documentation in its usual cost-estimating format; a standard format is not required. The Escrow Bid Documentation shall be submitted in the language (e.g., English) of the specification.

b. Escrow Bid Documentation must clearly itemize the estimated costs of performing the work of each bid item contained in the bid schedule, separating bid items into sub-items as required to present a detailed cost estimate and allow a detailed cost review. The Escrow Bid Documentation shall include all subcontractor bids or quotes, supplier bids or quotes, quantity takeoffs, crews, equipment, calculations of rates of production and progress, copies of quotes from subcontractors and suppliers, and memoranda, narratives, add/deduct sheets, and all other information used by the Contractor to arrive at the prices contained in the bid proposal. Estimated costs should be broken down into Contractor's usual estimate categories such as direct labor, repair labor, equipment ownership and operation, expendable materials, permanent materials, and subcontract costs as appropriate. All labor rates must be broken down to specify any and all burden costs including, but not limited to, health and welfare pay, vacation and holiday pay, pension contributions, training rates, benefits of any kind, insurance of any kind, workers' compensation, liability insurance, truck expenses, supply expenses of any kind, payroll taxes, and any other taxes of any kind. Plant and equipment and indirect costs should be detailed in the Contractor's usual format. The Contractor's allocation of indirect costs, contingencies, markup, and other items to each bid item shall be identified.

c. All costs shall be identified. For bid items amounting to less than $10,000, estimated unit costs are acceptable without a detailed cost estimate, provided that labor, equipment, materials, and subcontracts, as applicable, are included and provided that indirect costs, contingencies, and markup, as applicable, are allocated.

d. Bid Documentation provided by District should not be included in the Escrow Bid Documentation unless needed to comply with the following requirements.

4. Submittal of Escrow Bid Documentation

a. The Escrow Bid Documentation shall be submitted by the Contractor in a sealed container within **SEVEN (7)** calendar days after the date of the Notice of Award. The container shall be clearly marked on the outside with the Contractor's name, date of submittal, project name and the words "Escrow Bid Documentation – Intended to be opened in the presence of Authorized Representatives of Both District and Contractor".

b. By submitting Escrow Bid Documentation, Contractor represents that the material in the Escrow Bid Documentation constitutes all the documentary information used in preparation of the bid and that the Contractor has personally examined the contents of the Escrow Bid Documentation container and has found that the documents in the container are complete.

c. If Contractor's proposal is based upon subcontracting any part of the work, each subcontractor whose total subcontract price exceeds 5 percent of the total contract price proposed by Contractor, shall provide separate Escrow Documents to be included with those of Contractor. Those documents shall be opened and examined in the same manner and at the same time as the examination described above for Contractor.

d. If Contractor wishes to subcontract any portion of the Work after award, District retains the right to require Contractor to submit Escrow Documents for the Subcontractor before the subcontract is approved.

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

a. The Escrow Bid Documentation will be placed in escrow, for the life of the Contract, in a mutually agreeable institution. The cost of storage will be paid by Contractor for the duration of the project until final Contract payment. The storage facilities shall be the appropriate size for all the Escrow Bid Documentation and located conveniently to both District's and Contractor's offices.

b. The Escrow Bid Documentation shall be examined by both District and Contractor, at any time deemed necessary by either District or Contractor, to assist in the negotiation of price adjustments and change orders or the settlement of disputes and claims. In the case of legal proceedings, Escrow Bid Documentation shall be used subject to the terms of an appropriate protective order if requested by Contractor and ordered by a court of competent jurisdiction. Examination of the Escrow Bid Documentation is subject to the following conditions:

   (1) As trade secrets, the Escrow Bid Documentation is proprietary and confidential to the extent allowed by law.

   (2) District and Contractor shall each designate, in writing to the other party **SEVEN (7)** calendar days prior to any examination, the names of representatives who are authorized to examine the Escrow Bid Documentation. No other person shall have access to the Escrow Bid Documentation.

   (3) Access to the documents may take place only in the presence of duly designated representatives of the District and Contractor. If Contractor fails to designate a representative or appear for joint examination on **SEVEN (7)** calendar days’ notice, then the District representative may examine the Escrow Bid Documents alone upon an additional **THREE (3)** calendar days’ notice if a representative of the Contractor does not appear at the time set.

   (4) If a subcontractor has submitted sealed information to be included in the Escrow Bid Documents, access to those documents may take place only in the presence of a duly designated representative of the District,

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

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

END OF DOCUMENT

DOCUMENT 00 57 00

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

(Note: Contractor must use this form.)

This Escrow Agreement in Lieu of Retention ("Escrow Agreement") is made and entered into this ________ day of ___________________________________, 2023, by and between the Tamalpais Union High School District ("District"), whose address is 333 Doherty Drive, Larkspur, California 94977, and ____________________ ("Contractor"), whose address is __ _____________________________ , and ___________________________________ ("Escrow Agent"), a state or federally chartered bank in the state of California, whose address is __________________________.

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

1. Pursuant to section 22300 of Public Contract Code of the State of California, which is hereby incorporated by reference, Contractor has the following two (2) options:

   ☐ Deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by District pursuant to the Construction Contract No.___ entered into between District and Contractor for the _______________________ _____________________________________ Project, in the amount of _______________________________ Dollars ($_________) dated, _________________________, 2023, (the "Contract"); **or**

   ☐ On written request of Contractor, District shall make payments of the retention earnings for the above referenced Contract directly to Escrow Agent.

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

   Securities shall be held in the name of Tamalpais Union High School District, and shall designate Contractor as beneficial owner.

2. District shall make progress payments to Contractor for those funds which otherwise would be withheld from progress payments pursuant to Contract provisions, provided that Escrow Agent holds securities in form and amount specified above.

3. When District makes payment of retentions earned directly to Escrow Agent, Escrow Agent shall hold them for the benefit of Contractor until the time that the escrow created under this Escrow Agreement is terminated. Contractor may direct the investment of the payments into securities. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the Parties shall be equally applicable and binding when District pays Escrow Agent directly.

4. Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account, and all expenses of District. The District will charge Contractor $____________ for each of District's deposits to the escrow account. These expenses and payment terms shall be determined by District, Contractor, and Escrow Agent.

5. Interest earned on securities or money market accounts held in escrow and all interest earned on that interest shall be for sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to District.

6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from District to Escrow Agent that District consents to withdrawal of amount sought to be withdrawn by Contractor.

7. District shall have the right to draw upon the securities and/or withdraw amounts from the Escrow Account in the event of default by Contractor. Upon seven (7) days' written notice to Escrow Agent from District of the default, if applicable, Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by District. Escrow Agent shall not be authorized to determine the validity of any notice of default given by District pursuant to this paragraph, and shall promptly comply with District's instructions to pay over said escrowed assets. Escrow Agent further agrees to not interplead the escrowed assets in response to a conflicting demand.

8. Upon receipt of written notification from District certifying that the Contract is final and complete, and that Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all monies and securities on deposit and payments of fees and charges.

9. Escrow Agent shall rely on written notifications from District and Contractor pursuant to Paragraphs 5 through 8, inclusive, of this Escrow Agreement and District and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of securities and interest as set forth above.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

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

On behalf of District:	On behalf of Contractor:
Title	Title
Name	Name
Signature	Signature
Address	Address

On behalf of Escrow Agent:

Title

Name

Signature

Address

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

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

On behalf of District:	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: Contractor must use this form, NOT a surety company form.)

KNOW ALL PERSONS BY THESE PRESENTS:

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

RED HILL COMMUNITY SPORTS PARK REMODEL

("Project" or "Contract") which Contract dated __________________________, 2023, and all of the Contract Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof; and

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

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

____

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

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

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

The condition of the obligation is such that, if the above bound Principal, its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and agreements in the Contract and any alteration thereof made as therein provided, on its part to be kept and performed at the time and in the intent and meaning, including all contractual guarantees and warrantees of materials and workmanship, and shall indemnify and save harmless the District, its trustees, officers and agents, as therein stipulated, then this obligation shall become null and void, otherwise it shall be and remain in full force and virtue.

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

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

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

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on the _______ day of _____________, 2023.

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

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

END OF DOCUMENT

DOCUMENT 00 61 13.16

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

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

KNOW ALL PERSONS BY THESE PRESENTS:

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

RED HILL COMMUNITY SPORTS PARK REMODEL

("Project" or "Contract") which Contract dated ____________________, 2023, and all of the Contract Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof; and

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

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

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

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

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

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

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on the ______ day of _________________, 2023.

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

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

END OF DOCUMENT

DOCUMENT 00 63 40

ALLOWANCE EXPENDITURE DIRECTIVE FORM

Tamalpais Union High School District
333 Doherty Drive
Larkspur, CA 94977

ALLOWANCE EXPENDITURE DIRECTIVE NO.:

ALLOWANCE EXPENDITURE DIRECTIVE

Project: RED HILL COMMUNITY SPORTS PARK REMODEL

Date: _________________
DSA File No.:___________
DSA Appl. No.___________

Bid No.: 87

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

Owner Name, Address, Telephone:

____
____
____

Contractor Name, Address, Telephone:

____
____
____

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

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

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

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

It is expressly understood that the authorized allowance expenditure granted herein represents a full accord and satisfaction for any and all cost impacts of the items herein, and Contractor waives any and all further compensation based on the items herein. The value of the extra work or changes expressly includes any and all of the Contractor's costs and expenses, and its subcontractors, both direct and indirect. Any costs, expenses, or damages not included are deemed waived.

Signatures:

DISTRICT: TAMALPAIS UNION HIGH SCHOOL DISTRICT Date: ___________________________ By:_____________________________ [Print Name and Title here]	**CONTRACTOR:** _________________________________ Date: ___________________________ By:_____________________________ [Print Name and Title here]
ARCHITECT: _________________________________ Date: ___________________________ By:_____________________________ [Print Name and Title here]	**PROJECT INSPECTOR:** _________________________________ Date: ___________________________ By:_____________________________ [Print Name and Title here]

END OF DOCUMENT

DOCUMENT 00 63 47

DAILY FORCE ACCOUNT REPORT

From: Contractor
[Name/Address]

To: Owner
[Name/Address]

Project: RED HILL COMMUNITY SPORTS PARK REMODEL

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

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

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

Description	Unit Price	Quantity	Cost

Daily subtotal (w/out markup): $______________________

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

Name	Craft	Regular Hrs.	Rate	OT Hrs.	Rate

Daily subtotal (w/out markup): $______________________

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

Type / Model	Hrs. Operated	Rate

Daily subtotal (w/out markup): $________________________

Complete based on information reported above.

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

	WORK PERFORMED BY CONTRACTOR	**ADD**
(a)	**Material**	
(b)	**Add Labor**	
(c)	**Add Equipment**	
(d)	**Subtotal**	
(e)	**Add Overhead and Profit for Contractor**, not to exceed fifteen percent (15%) of Item (d)	
(f)	**Subtotal**	
(g)	**Add Bond and Insurance**, not to exceed two percent (2%) of Item (f)	
(h)	**TOTAL**	

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

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

SUBMITTED BY:		**REVIEWED BY:**	
Contractor:		District:	
[Name]	Date	[Name]	Date

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

END OF DOCUMENT

DOCUMENT 00 63 57

PROPOSED CHANGE ORDER FORM

Tamalpais Union High School District
333 Doherty Drive
Larkspur, CA 94977

PCO NO.:

Project: RED HILL COMMUNITY SPORTS PARK REMODEL
Bid No.: 87
RFI #:____________________________________

Date: __________________
DSA File No.: ___________
DSA Appl. No.:__________

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

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

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

[REMAINDER OF PAGE LEFT BLANK INTENTIONALLY]

	WORK PERFORMED BY CONTRACTOR	**ADD**	**DEDUCT**
(a)	**Material** (attach itemized quantity and unit cost plus sales tax)		
(b)	**Add Labor** (attach itemized hours and rates, fully Burdened, and specify the hourly rate for each additional labor burden, for example, payroll taxes, fringe benefits, etc.)		
(c)	**Add Equipment** (attach suppliers' invoice)		
(d)	**Add General Conditions** (if Time is Compensable) (attach supporting documentation)		
(e)	**Subtotal**		
(f)	**Add Overhead and Profit for Contractor**, not to exceed fifteen percent (15%) of Item (e)		
(g)	**Subtotal**		
(h)	**Add Bond and Insurance**, not to exceed two percent (2%) of Item (g)		
(i)	**TOTAL**		
(j)	**Time** (zero unless indicated; "TBD" not permitted)	**____ Calendar Days**	

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

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

SUBMITTED BY:

Contractor:

________________________ __________
[Name] Date

END OF DOCUMENT

DOCUMENT 00 63 63

CHANGE ORDER FORM

Tamalpais Union High School District
333 Doherty Drive
Larkspur, CA 94977

CHANGE ORDER NO.:

CHANGE ORDER

Project: RED HILL COMMUNITY SPORTS PARK REMODEL
Bid No.: 87

Date: ________________
DSA File No.: __________
DSA Appl. No.:_________

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

Owner: ____________________________
[Name / Address]
____
____

Contractor: ____________________________
[Name / Address]
____
____

Architect: _________________________
[Name / Address]
____
____

Project Inspector: ______________________
[Name / Address]
____
____

Reference	**Description**	**Cost**	**Days Ext.**
PCO # Requested by: Performed by: Reason:	[Description of change] [Requester] [Performer] [Reason]	$	
PCO # Requested by: Performed by: Reason:	[Description of change] [Requester] [Performer] [Reason]	$	
PCO # Requested by: Performed by: Reason:	[Description of change] [Requester] [Performer] [Reason]	$	

Contract time will be adjusted as follows: Previous Completion Date: __[Date] _______[#]_ Calendar Days Extension (zero unless otherwise indicated) Current Completion Date: __[Date]	Original Contract Amount:	$
	Amount of Previously Approved Change Order(s):	$
	Amount of this Change Order:	$
	Contract Amount:	$

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

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

It is expressly understood that the compensation and time, if any, granted herein represent a full accord and satisfaction for any and all time and cost impacts of the items herein, and Contractor waives any and all further compensation or time extension based on the items herein. The value of the extra work or changes expressly includes any and all of the Contractor's costs and expenses, and its subcontractors, both direct and indirect, resulting from additional time required on the project or resulting from delay to the project including without limitation, cumulative impacts. Any costs, expenses, damages or time extensions not included are deemed waived.

Signatures:

District:		Contractor:	
______________________	__________	______________________	__________
[Name]	Date	[Name]	Date
Architect:		Project Inspector:	
______________________	__________	______________________	__________
[Name]	Date	[Name]	Date

END OF DOCUMENT

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 TAMALPAIS UNION HIGH SCHOOL DISTRICT ("District") and ___________________________ __________________ ("Contractor"), whose place of business is ________________________ ________________________.

RECITALS

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

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

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

AGREEMENT AND RELEASE

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

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

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

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

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

Claim No.	Description of Claim	Amount of Claim	Date Claim Submitted
________	____________________________	$________________	_____________
________	____________________________	$________________	_____________
________	____________________________	$________________	_____________
________	____________________________	$________________	_____________
________	____________________________	$________________	_____________
________	____________________________	$________________	_____________

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

5. Consistent with California Public Contract Code section 7100, Contractor hereby agrees that, in consideration of the payment set forth in Paragraph 2 hereof, Contractor hereby releases and forever discharges District, all its agents, employees, inspectors, assignees, and transferees from any and all liability, claims, demands, actions, or causes of action of whatever kind or nature arising out of or in any way concerned with the Work under the Contract.

6. Guarantees and warranties for the Work, and any other continuing obligation of Contractor, including without limitation, the duty to defend, indemnify and hold harmless the District, shall remain in full force and effect as specified in the Contract Documents.

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

> A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS THAT THE CREDITOR OR RELEASING PARTY DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE AND THAT, IF KNOWN BY HIM OR HER, WOULD HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR OR RELEASED PARTY.

8. The provisions of this Agreement and Release are contractual in nature and not mere recitals and shall be considered independent and severable. If any such provision or any part thereof shall be at any time held invalid in whole or in part under any federal, state, county, municipal, or other law, ruling, or regulations, then such provision, or part thereof, shall remain in force and effect to the extent permitted by law, and the remaining provisions of this Agreement and Release shall also remain in full force and effect, and shall be enforceable.

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

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

TAMALPAIS UNION HIGH SCHOOL DISTRICT

Signature: ______________________________________

Print Name: ____________________________________

Title: ____

CONTRACTOR: ___________________________________

Signature: ______________________________________

Print Name: ____________________________________

Title: ____

END OF DOCUMENT

DOCUMENT 00 65 36

GUARANTEE FORM

______________________________ ("Contractor") hereby agrees that the _______________ ____________ ("Work" of Contractor) which Contractor has installed for the Tamalpais Union High School District ("District") for the following project:

PROJECT: **RED HILL COMMUNITY SPORTS PARK REMODEL**

("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 one year(s) from the date of completion as defined in Public Contract Code section 7107, subdivision (c), ordinary wear and tear and unusual abuse or neglect excepted. The date of completion is __________________, 20___.

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

Date: ____

Proper Name of Contractor: ____

Signature: ____

Print Name: ____

Title: ____

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

Name: ____

Address: ____

Phone No.: ____

Email: ____

END OF DOCUMENT

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, or extreme temperature conditions in excess of the norm for the location and time of year it occurred based on the closest weather station data averaged over the past five years, (2) that is unanticipated and would cause unsafe work conditions and/or is unsuitable for scheduled work that should not be performed during inclement weather (i.e., exterior finishes), and (3) at the Project.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1.1.24 DSA: Division of the State Architect.

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

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

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

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

1.1.29 Plans: See **Drawings**.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1.1.49 State: The State of California.

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

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

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

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

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

1.2 Laws Concerning the Contract

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

1.3 No Oral Agreements

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

1.4 No Assignment

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

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

1.5 Notice and Service Thereof

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

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

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

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

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

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

1.6 No Waiver

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

1.7 Substitutions for Specified Items

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

1.8 Materials and Work

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

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

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

1.8.4 For all materials and equipment specified or indicated in the Drawings, the Contractor shall provide all labor, materials, equipment, and services necessary for complete assemblies and complete working systems, functioning as intended. Incidental items not indicated on Drawings, nor mentioned in the Specifications, that can legitimately and reasonably be inferred to belong to the Work described, or be necessary in good practice to provide a complete assembly or system, shall be furnished as though itemized here in every detail. In all instances, material and equipment shall be installed in strict accordance with each manufacturer's most recent published recommendations and specifications.

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

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

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

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

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

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

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

1.8.10 [RESERVED]

2. [RESERVED]

3. ARCHITECT

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

3.2 Architect shall, with the District and on behalf of the District, determine the amount, quality, acceptability, and fitness of all parts of the Work, and interpret the

Specifications, Drawings, and shall, with the District, interpret all other Contract Documents.

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

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

4. CONSTRUCTION MANAGER

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

4.2 The Construction Manager, however, will have authority to reject materials and/or workmanship not conforming to the Contract Documents, as determined by the District, the Architect, and/or the Project Inspector. The Construction Manager shall also have the authority to require special inspection or testing of any portion of the Work, whether it has been fabricated, installed, or fully completed. Any decision made by the Construction Manager, in good faith, shall not give rise to any duty or responsibility of the Construction Manager to: the Contractor; any Subcontractor; the Contractor or Subcontractor's respective agents, employees; or other persons performing any of the Work. The Construction Manager shall have free access to any or all parts of Work at any time.

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

5. INSPECTOR, INSPECTIONS, AND TESTS

5.1 Project Inspector

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

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

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

5.2 Tests and Inspections

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

5.2.2 The District will select an independent testing laboratory to conduct the tests. Selection of the materials required to be tested shall be by the laboratory or the District's representative and not by the Contractor. The Contractor shall notify the District's representative a sufficient time in advance of its readiness for required observation or inspection.

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

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

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

5.3 Costs for After Hours and/or Off Site Inspections

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

6. CONTRACTOR

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

6.1 Status of Contractor

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

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

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

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

6.1.5 [RESERVED]

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

6.1.7 [RESERVED]

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

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6.2 Project Inspection Card(s)

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

6.3 Contractor's Supervision

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

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

6.3.3 Before commencing the Work herein, Contractor shall give written notice to District of the name of its project manager and construction superintendent. Neither the Contractor's project manager nor construction superintendent shall be changed except with prior written notice to District. If the Contractor's project manager and/or construction superintendent proves to be unsatisfactory to Contractor, or to District, any of the District's employees, agents, the Construction Manager, or the Architect, the unsatisfactory project manager and/or construction superintendent shall be replaced. However, Contractor shall notify District in writing before any change occurs, but no less than two (2) business days prior. Any replacement of the project manager and/or construction superintendent shall be made promptly and must be satisfactory to the District. The Contractor's project manager and construction superintendent shall each represent Contractor, and all directions given to Contractor's project manager and/or construction superintendent shall be as binding as if given to Contractor.

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

6.4 Duty to Provide Fit Workers

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

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

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

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

6.5 Field Office

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

6.6 Purchase of Materials and Equipment

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

6.7 Documents on Work

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

6.7.2 Daily Job Reports.

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

6.7.2.1.1 A brief description of all Work performed on that day.

6.7.2.1.2 A summary of all other pertinent events and/or occurrences on that day.

6.7.2.1.3 The weather conditions on that day.

6.7.2.1.4 A list of all Subcontractor(s) working on that day, including DIR registration numbers.

6.7.2.1.5 A list of each Contractor employee working on that day and the total hours worked for each employee.

6.7.2.1.6 A complete list of all equipment on Site that day, whether in use or not.

6.7.2.1.7 A complete list of all materials, supplies, and equipment delivered on that day.

6.7.2.1.8 A complete list of all inspections and tests performed on that day.

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

6.8 Preservation of Records

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

6.9 Integration of Work

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

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

6.9.3 Contractor and all Subcontractors shall take all field dimensions required in performance of the Work, and shall verify all dimensions and conditions on the

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

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

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

6.10 Notifications

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

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

6.11 Obtaining of Permits, Licenses and Registrations

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

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

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

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

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

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

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

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

6.11.2.3.4 Best management practices ("BMPs").

6.12 Royalties and Patents

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

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

6.13 Work to Comply With Applicable Laws and Regulations

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

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

6.13.1.2 National Board of Fire Underwriters' Regulations

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

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

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

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

6.13.1.7 Americans with Disabilities Act

6.13.1.8 Education Code of the State of California

6.13.1.9 Government Code of the State of California

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

6.13.1.11 Public Contract Code of the State of California

6.13.1.12 California Art Preservation Act

6.13.1.13 U. S. Copyright Act

6.13.1.14 U. S. Visual Artists Rights Act

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

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

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

6.13.5 [RESERVED]

6.14 Safety/Protection of Persons and Property

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

6.14.21 In the event that the Contractor enters into any agreement with owners of any adjacent property to enter upon the adjacent property for the purpose of performing the Work, Contractor shall fully indemnify, defend, and hold harmless each person, entity, firm, or agency that owns or has any interest in adjacent property. The form and content of the agreement of indemnification shall be approved by the District prior to the commencement of any Work on or about the adjacent property. The Contractor shall also indemnify the District as provided in the indemnification provision herein. These provisions shall be in addition to any other requirements of the owners of the adjacent property.

6.15 Working Evenings and Weekends

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

6.16 Cleaning Up

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

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

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

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

6.17 No Relief from Obligations Based on Review by Other Persons

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

7. SUBCONTRACTORS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

8. OTHER CONTRACTS/CONTRACTORS

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

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

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

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

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

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

9. DRAWINGS AND SPECIFICATIONS

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

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

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

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

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

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

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

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

9.9 Ownership of Drawings

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

10. CONTRACTOR'S SUBMITTALS AND SCHEDULES

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

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

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

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

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

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

10.1.1.2.1 Divided into at least the following categories:

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

10.1.1.2.2 And also divided by each of the following areas:

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

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

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

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

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

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

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

10.1.1.3 **Preliminary Schedule of Submittals.** A preliminary schedule of submittals, including Shop Drawings, Product Data, and Samples submittals. Once approved by District, this shall become the Submittal Schedule. All submittals shall be forwarded to the District by the date indicated on the approved Submittal Schedule, unless an earlier date is necessary to maintain the Construction Schedule, in which case those submittals shall be forwarded to the District so as not to delay the Construction Schedule. Upon request by the District, Contractor shall provide an electronic copy of all submittals to the

District. All submittals shall be submitted no later than 90 days after the Notice to Proceed.

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

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

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

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

10.1.1.5 **Complete Registered Subcontractors List.** The name, address, telephone number, facsimile number, California State Contractors License number, classification, DIR registration number and monetary value of all Subcontracts of any tier for parties furnishing labor, material, or equipment for completion of the Project.

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

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

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

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

10.2 Monthly Progress Schedule(s)

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

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

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

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

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

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

10.3 Material Safety Data Sheets (MSDS)

Contractor is required to ensure Material Safety Data Sheets are available in a readily accessible place at the Site for any material requiring a Material Safety Data Sheet per the federal "Hazard Communication" standard, or employees' "right to know" law. The Contractor is also required to ensure proper labeling on substances brought onto the job site and that any person working with the material or within the general area of the material is informed of the hazards of the substance and follows proper handling and protection procedures. Two additional copies of the Material Safety Data Sheets shall also be submitted directly to the District.

10.4 Submittals

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

11. SITE ACCESS, CONDITIONS, AND REQUIREMENTS

11.1 Site Investigation

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

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

11.2 Soils Investigation Report

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

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

11.3 Access to Work

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

11.4 Layout and Field Engineering

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

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

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

11.5 Utilities

Utilities shall be provided as indicated in the Specifications.

11.6 Sanitary Facilities

Sanitary facilities shall be provided as indicated in the Specifications.

11.7 Surveys

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

11.8 Regional Notification Center

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

11.9 Existing Utility Lines

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

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

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

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

11.10 Notification

Contractor understands, acknowledges and agrees that the purpose for prompt notification to the District pursuant to these provisions is to allow the District to investigate the condition(s) so that the District shall have the opportunity to decide how the District desires to proceed as a result of the condition(s). Accordingly, failure of Contractor to promptly notify the District in writing, pursuant to these provisions, shall constitute Contractor's waiver of any claim for damages or delay incurred as a result of the condition(s).

11.11 Hazardous Materials

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

11.12 No Signs

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

12. TRENCHES

12.1 Trenches Greater Than Five Feet

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

12.2 Excavation Safety

If such plan varies from the Shoring System Standards established by the Construction Safety Orders, the plan shall be prepared by a registered civil or structural engineer, but in no case shall such plan be less effective than that required by the Construction Safety

Orders. No excavation of such trench or trenches shall be commenced until said plan has been accepted by the District or by the person to whom authority to accept has been delegated by the District.

12.3 No Tort Liability of District

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

12.4 No Excavation without Permits

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

12.5 Discovery of Hazardous Waste and/or Unusual Conditions

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

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

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

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

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

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

13. INSURANCE AND BONDS

13.1 Insurance

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

13.1.1 Commercial General Liability and Automobile Liability Insurance

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

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

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

13.1.2 Excess Liability Insurance

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

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

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

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

13.1.4 Workers' Compensation and Employers' Liability Insurance

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

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

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

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

13.1.6 Pollution Liability Insurance

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

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

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

13.1.7 Proof of Insurance and Other Requirements: Endorsements and Certificates

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

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

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

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

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

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

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

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

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

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

13.1.7.4 Insurance written on a "claims made" basis shall be retroactive to a date that coincides with or precedes Contractor's commencement of Work, including subsequent policies purchased as renewals or replacements. Said policy is to be renewed by the Contractor and all Subcontractors for a period of five (5) years following completion of the Work or termination of this Agreement. Such insurance must have the same coverage and limits as the policy that was in effect during the term of this Agreement, and will cover the Contractor and all Subcontractors for all claims made.

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

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

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

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13.1.8 Insurance Policy Limits

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

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

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

13.2 Contract Security - Bonds

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

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

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

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

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

14. WARRANTY/GUARANTEE/INDEMNITY

14.1 Warranty/Guarantee

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

14.1.2 In addition to guarantees required elsewhere, Contractor shall, and hereby does guarantee and warrant all Work furnished on the job against all defects for a period of **ONE (1)** year after the later of the following dates, unless a longer period is provided for in the Contract Documents:

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

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

At the District's sole option, Contractor shall repair or replace any and all of that Work, together with any other Work that may be displaced in so doing, that may prove defective in workmanship and/or materials within a **ONE (1)** year period from date of completion as defined above, unless a longer period is provided for in the Contract Documents, without expense whatsoever to District. In the event of failure of Contractor and/or Surety to commence and pursue with diligence said replacements or repairs within ten (10) days after being notified in writing, Contractor and Surety hereby acknowledge and agree that District is authorized to proceed to have defects repaired and made good at expense of Contractor and/or Surety who hereby agree to pay costs and charges therefore immediately on demand.

14.1.3 If, in the opinion of District, defective work creates a dangerous condition or requires immediate correction or attention to prevent further loss to District or to prevent interruption of District operations, District will attempt to give the notice required above. If Contractor or Surety cannot be contacted or neither complies with District's request for correction within a reasonable time as determined by District, District may, notwithstanding the above provision, proceed to make any and all corrections and/or provide attentions the District believes are necessary. The costs of correction or attention shall be charged against Contractor and Surety of the guarantees provided in this Article or elsewhere in this Contract.

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

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

14.2 Indemnity and Defense

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

14.2.2 To the furthest extent permitted by California law, Contractor shall also defend Indemnitees, at its own expense, including but not limited to attorneys' fees and costs, against all Claims caused by, arising out of, resulting from, or incidental to, in whole or in part, the performance of the Work under this Contract by the Contractor, its Subcontractors, vendors, or suppliers. However, without impacting Contractor's obligation to provide an immediate and ongoing defense of Indemnitees, the Contractor's defense obligation shall be retroactively reduced by the proportion of the Indemnitees' and/or Architect's liability to the extent caused by the sole negligence, active negligence, or willful misconduct of the Indemnitees, and/or defects in design furnished by the Architect, as found by a court or arbitrator of competent jurisdiction. The District shall have the right to accept or reject any legal representation that Contractor proposes to defend the Indemnitees. If any Indemnitee provides its own defense due to failure to timely respond to tender of defense, rejection of tender of defense, or conflict of interest of proposed counsel, Contractor shall reimburse such Indemnitee for any expenditures. Contractor's defense obligation shall not be construed to negate, abridge, or otherwise reduce any right or obligation of defense that would otherwise exist as to any Indemnitee or other person described herein. Contractor's defense obligation includes, but is not limited to, any failure or alleged failure by Contractor to comply with any provision of law, any failure or alleged failure to timely and properly fulfill all of its obligations under the Contract Documents in strict accordance with their terms, and without limitation, any failure or alleged failure of Contractor's obligations regarding any stop payment notice actions or liens, including Civil Wage and Penalty Assessments and/or Orders by the DIR. The Contractor shall give prompt notice to the District in the event of any Claim(s).

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

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

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

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

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

15. TIME

15.1 Notice to Proceed

15.1.1 District may issue a Notice to Proceed within ninety (90) days from the date of the Notice of Award. Once Contractor has received the Notice to Proceed, Contractor shall complete the Work within the period of time indicated in the Contract Documents.

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

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

15.2 Computation of Time / Adverse Weather

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

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

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

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

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

15.2.1.5 Exceeds twelve (12) days of delay per year.

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

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

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

15.3 Hours of Work

15.3.1 Sufficient Forces

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

15.3.2 Performance During Working Hours

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

15.3.3 No Work during State Testing

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

15.4 Progress and Completion

15.4.1 Time of the Essence

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

15.4.2 No Commencement Without Insurance or Bonds

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

15.5 Schedule

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

15.6 Expeditious Completion

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

16. EXTENSIONS OF TIME – LIQUIDATED DAMAGES

16.1 Liquidated Damages

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

16.2 Excusable Delay

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

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

16.2.3 In the event the Contractor requests an extension of Contract Time for unavoidable delay, such request shall be submitted in accordance with the provisions in the Contract Documents governing changes in Work. When requesting time, requests must be submitted with full justification and documentation. If the Contractor fails to submit justification, it waives its right to a time extension at a later date. Such justification must be based on the official Construction Schedule as updated at the time of occurrence of the delay or execution of Work related to any changes to the Scope of Work. Any claim for delay must include the following information as support, without limitation:

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

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

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

16.3 No Additional Compensation for Delays Within Contractor's Control

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

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

16.3.2.1 The District is responsible for the delay;

16.3.2.2 The delay is unreasonable under the circumstances involved;

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

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

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

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

16.3.3.1 Actually incurred performing the Work;

16.3.3.2 Not compensated by the Markup allowed; and

16.3.3.3 Directly result from the extended Contract Time.

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

16.4 Float or Slack in the Schedule

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

17. CHANGES IN THE WORK

17.1 No Changes Without Authorization

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

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

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

17.1.4 A Change Order or Construction Change Directive will become effective when approved by the Board, notwithstanding that Contractor has not signed it. A Change Order or Construction Change Directive will become effective without Contractor's signature provided District indicates it as a "Unilateral Change Order". Any dispute as to the adjustment in the Contract Price or Contract Time, if any, of the Unilateral Change Order shall be resolved pursuant to the Payment and Claims and Disputes provisions herein.

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

17.2 Architect Authority

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

17.3 Change Orders

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

17.3.1.1 A description of a change in the Work;

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

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

17.4 Construction Change Directives

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

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

17.5 Force Account Directives

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

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

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

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

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

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

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

17.6 Price Request

17.6.1 Definition of Price Request

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

17.6.2 Scope of Price Request

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

17.7 Proposed Change Order

17.7.1 Definition of Proposed Change Order

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

17.7.2 Changes in Contract Price

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

17.7.3 Changes in Time

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

17.7.4 Unknown and/or Unforeseen Conditions

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

17.7.5 Time to Submit Proposed Change Order

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

17.7.6 Proposed Change Order Certification

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

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

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17.8 Format for Proposed Change Order

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

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

	WORK PERFORMED BY CONTRACTOR	**ADD**	**DEDUCT**
(a)	**Material** (attach itemized quantity and unit cost plus sales tax)		
(b)	**Add Labor** (attach itemized hours and rates, fully Burdened, and specify the hourly rate for each additional labor burden, for example, payroll taxes, fringe benefits, etc.)		
(c)	**Add Equipment** (attach suppliers' invoice)		
(d)	**Add General Conditions Cost** (if Time is Compensable) (attach supporting documentation)		
(e)	**Subtotal**		
(f)	**Add Overhead and Profit for Contractor**, not to exceed fifteen percent (15%) of Item (e)		
(g)	**Subtotal**		
(h)	**Add Bond and Insurance**, not to exceed two percent (2%) of Item (g)		
(i)	**TOTAL**		
(j)	**Time** (zero unless indicated; "TBD" not permitted)	**_____ Calendar Days**	

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

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

17.8.4 Equipment. As a precondition to the District's duty to pay for Equipment rental or loading and transportation, Contractor shall provide satisfactory evidence of the actual costs of Equipment from the supplier, vendor or rental agency of same. Contractor shall be compensated for the actual cost of the necessary and direct use of Equipment in the performance of the change in the Work. Use of such Equipment in the performance of the change in the Work shall be compensated in increments of fifteen (15) minutes. Rental time for Equipment moved by its own power shall include time required to move such Equipment to the site of the Work from the nearest available rental source of the same. If Equipment is not moved to the Site by its own power, Contractor will be compensated for the loading and transportation costs in lieu of rental time. The foregoing notwithstanding, neither moving time or loading and transportation time shall be allowed if the Equipment is used for performance of any portion of the Work other than the change in the Work. Unless prior approval in writing is obtained by the Contractor from the Architect, the Project Inspector and the District, no costs or compensation shall be allowed for time while Construction Equipment is inoperative, idle or on standby, for any reason. Contractor shall not be entitled to an allowance or any other compensation for

Equipment or tools used in the performance of change in the Work where such Equipment or tools have a replacement value of $500.00 or less. Equipment costs claimed by the Contractor in connection with the performance of any Work shall not exceed rental rates established by distributors or construction equipment rental agencies in the locality of the Site; any costs asserted which exceed such rental rates shall not be allowed or paid. Unless otherwise specifically approved in writing by the Architect, the Project Inspector and the District, the allowable rate for the use of Equipment in connection with the Work shall constitute full compensation to the Contractor for the cost of rental, fuel, power, oil, lubrication, supplies, necessary attachments, repairs or maintenance of any kind, depreciation, storage, insurance, labor (exclusive of labor costs of the Equipment operator), and any and all other costs incurred by the Contractor incidental to the use of such Equipment.

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

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

17.9 Change Order Certification

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

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

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

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

17.10 Determination of Change Order Cost

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

17.10.1.1 District acceptance of a PCO;

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

17.10.1.3 By agreement between District and Contractor.

17.11 Deductive Change Orders

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

17.12 Addition or Deletion of Alternate Bid Item(s)

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

17.13 Discounts, Rebates, and Refunds

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

Contractor’s cost in determining the actual cost of construction for purposes of any change, addition, or omission in the Work as provided herein.

17.14 Accounting Records

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

17.15 Notice Required

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

17.16 Applicability to Subcontractors

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

17.17 Alteration to Change Order Language

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

17.18 Failure of Contractor to Execute Change Order

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

18. REQUEST FOR INFORMATION

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

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

19. PAYMENTS

19.1 Contract Price

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

19.2 Applications for Progress Payments

19.2.1 Procedure for Applications for Progress Payments

19.2.1.1 Application for Progress Payment

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

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

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

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

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

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

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

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

19.2.1.1.1.8 A total of the retentions held;

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

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

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

19.2.1.1.1.12 A duly completed and executed conditional waiver and release upon progress payment compliant with Civil Code section 8132 from the Contractor and each subcontractor of any tier and supplier to be paid from the current progress payment;

19.2.1.1.1.13 A duly completed and executed unconditional waiver and release upon progress payment compliant with Civil Code section 8134 from the Contractor and each subcontractor of any tier and supplier that was paid from the previous progress payment(s); and

19.2.1.1.1.14 A certification by the Contractor of the following:

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

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

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

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

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

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

19.2.2 Prerequisites for Progress Payments

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

19.2.2.1.1 Installation of the Project sign;

19.2.2.1.2 Installation of field office;

19.2.2.1.3 Installation of temporary facilities and fencing;

19.2.2.1.4 Schedule of Values;

19.2.2.1.5 Contractor's Construction Schedule;

19.2.2.1.6 Schedule of unit prices, if applicable;

19.2.2.1.7 Submittal Schedule;

19.2.2.1.8 Receipt by Architect of all submittals due as of the date of the payment application;

19.2.2.1.9 Copies of necessary permits;

19.2.2.1.10 Copies of authorizations and licenses from governing authorities;

19.2.2.1.11 Initial progress report;

19.2.2.1.12 Surveyor qualifications;

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

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

19.2.2.1.15 All bonds and insurance endorsements; and

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

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

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

19.3 Progress Payments

19.3.1 District's Approval of Application for Payment

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

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

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

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

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

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

19.3.1.2.2 Results of subsequent tests and inspections,

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

19.3.1.2.4 Specific qualifications expressed by the Architect.

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

19.3.2 Payments to Contractor

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

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

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

19.3.3 No Waiver

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

19.4 Decisions to Withhold Payment

19.4.1 Reasons to Withhold Payment

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

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

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

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

19.4.1.4 Liquidated damages assessed against the Contractor.

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

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

19.4.1.7 Unsatisfactory prosecution of the Work by the Contractor.

19.4.1.8 Failure to store and properly secure materials.

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

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

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

19.4.1.12 Unauthorized deviations from the Contract Documents.

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

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

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

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

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

19.4.1.18 Failure to properly maintain or clean up the Site.

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

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

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

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

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

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

19.4.2 Reallocation of Withheld Amounts

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

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

(150%) of the estimated reasonable value of the nonconforming Work) shall be made therefor.

19.4.3 Payment After Cure

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

19.5 Subcontractor Payments

19.5.1 Payments to Subcontractors

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

19.5.2 No Obligation of District for Subcontractor Payment

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

19.5.3 Joint Checks

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

20. COMPLETION OF THE WORK

20.1 Completion

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

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

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

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

20.2 Close-Out/Certification Procedures

20.2.1 Punch List

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

20.2.2 Close-Out/Certification Requirements

20.2.2.1 Utility Connections

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

20.2.2.2 Record Drawings and Record Specifications

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

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

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

20.2.2.3 Construction Storm Water Permit, if applicable

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

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

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

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

20.3 Final Inspection

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

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

20.3.3 Final Inspection Requirements

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

20.3.3.1.1 The Work has been completed.

20.3.3.1.2 All life safety items are completed and in working order.

20.3.3.1.3 Mechanical and electrical Work including, without limitation, security system, data, and fire alarm, are complete and tested, fixtures are in place, connected, and ready for tryout.

20.3.3.1.4 Electrical circuits scheduled in panels and disconnect switches labeled.

20.3.3.1.5 Painting and special finishes complete.

20.3.3.1.6 Doors complete with hardware, cleaned of protective film, relieved of sticking or binding, and in working order.

20.3.3.1.7 Tops and bottoms of doors sealed.

20.3.3.1.8 Floors waxed and polished as specified.

20.3.3.1.9 Broken glass replaced and glass cleaned.

20.3.3.1.10 Grounds cleared of Contractor’s equipment, raked clean of debris, and trash removed from Site.

20.3.3.1.11 Work cleaned, free of stains, scratches, and other foreign matter, and damaged and broken material replaced.

20.3.3.1.12 Finished and decorative work shall have marks, dirt, and superfluous labels removed.

20.3.3.1.13 Final cleanup, as provided herein.

20.4 Costs of Multiple Inspections

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

20.5 Partial Occupancy or Use Prior to Completion

20.5.1 District’s Rights to Occupancy

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

20.5.2 Inspection Prior to Occupancy or Use

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

20.5.3 No Waiver

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

21. FINAL PAYMENT AND RETENTION

21.1 Final Payment

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

21.2 Prerequisites for Final Payment

The following conditions must be fulfilled prior to Final Payment:

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

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

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

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

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

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

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

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

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

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

21.3 Retention

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

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

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

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

21.3.2 No interest shall be paid on any retention, or on any amounts withheld due to a failure of the Contractor to perform, in accordance with the terms and conditions of the Contract Documents, except as provided to the contrary in any Escrow Agreement between the District and the Contractor pursuant to Public Contract Code section 22300.

21.4 Substitution of Securities

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

22. UNCOVERING OF WORK

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

23. NONCONFORMING WORK AND CORRECTION OF WORK

23.1 Nonconforming Work

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

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

23.2 Correction of Work

23.2.1 Correction of Rejected Work

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

23.2.2 One-Year Warranty Corrections

If, within one (1) year after the date of Completion of the Work or a designated portion thereof, or after the date for commencement of warranties established hereunder, or by the terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the District to do so. This period of one (1) year shall be extended with respect to portions of the Work first performed after Completion by the period of time between Completion and the actual performance of the Work. This obligation hereunder shall survive District's acceptance of the Work under the Contract and termination of the Contract. The District shall give such notice promptly after discovery of the condition.

23.3 District's Right to Perform Work

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

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

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

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

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

24. TERMINATION AND SUSPENSION

24.1 District's Request for Assurances

If District at any time reasonably believes Contractor is or may be in default under this Contract, District may in its sole discretion notify Contractor of this fact and request written assurances from Contractor of performance of Work and a written plan from Contractor to remedy any potential default under the terms this Contract that the District may advise Contractor of in writing. Contractor shall, within ten (10) calendar days of District's request, deliver a written cure plan that meets the District's requirements in its request for assurances. Contractor's failure to provide such written assurances of performance and the required written plan, within ten (10) calendar days of request, will constitute a material breach of this Contract sufficient to justify termination for cause.

24.2 District's Right to Terminate Contractor for Cause

24.2.1 **Grounds for Termination:** The District, in its sole discretion, may terminate the Contract and/or terminate the Contractor's right to perform the work of the Contract based upon any of the following:

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

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

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

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

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

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

24.2.1.7 Contractor fails to supply labor, including that of Subcontractors, that is sufficient to prosecute the Work or that can work in harmony with all other elements of labor employed or to be employed on the Work; or

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

24.2.2 Notification of Termination

24.2.2.1 Upon the occurrence at District's sole determination of any of the above conditions, District may, without prejudice to any other right or remedy, serve written notice upon Contractor and its Surety of District's termination of this Contract and/or the Contractor's right to perform the work of the Contract. This notice will contain the reasons for termination. Unless, within three (3) days after the service of the notice, any and all condition(s) shall cease, and any and all violation(s) shall cease, or arrangement satisfactory to District for the correction of the condition(s) and/or violation(s) be made, this Contract and/or the Contractor's right to perform the Work of the Contract shall cease and terminate. Upon termination, Contractor shall not be entitled to receive any further payment until the entire Work is finished.

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

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

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

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

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

24.3 Termination of Contractor for Convenience

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

24.3.2 Upon notice, Contractor shall:

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

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

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

24.3.3 Within 30 days of the notice, Contractor submit to the District a payment application for the actual cost for labor, materials, and services performed, including all Contractor's and Subcontractor(s)' mobilization and/or demobilization costs, that is unpaid. Contractor shall have no claims against the District except for the actual cost for labor, materials, and services performed that adequately documented through timesheets, invoices, receipts, or otherwise. District shall pay all undisputed invoice(s) for work performed until the notice of termination.

24.3.4 Under a termination for convenience, the District retains the right to all the options available to the District if there is a termination for cause.

24.4 Effect of Termination

24.4.1 Contractor shall, only if ordered to do so by the District, immediately remove from the Site all or any materials and personal property belonging to Contractor that have not been incorporated in the construction of the Work, or which are not in place in the Work. The District retains the right, but not the obligation, to keep and use any materials and personal property belonging to Contractor that have not been incorporated in the construction of the Work, or which are not in place in the Work. The Contractor and its Surety shall be liable upon the Performance Bond for all damages caused to the District by reason of the Contractor's failure to complete the Contract.

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

24.4.3 In the event termination for cause is determined to have not been for cause, the termination shall be deemed to have been a termination for convenience effective as of the same date as the purported termination for cause.

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

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

24.4.6 The District shall have the right (but shall have no obligation) to assume and/or assign to a general contractor or construction manager or other third party who is qualified and has sufficient resources to complete the Work, the rights of the Contractor under its subcontracts with any or all Subcontractors. In the event of an assumption or assignment by the District, no Subcontractor shall have any claim against the District or third party for Work performed by Subcontractor or other matters arising prior to termination of the Contract. The District or any third party, as the case may be, shall be liable only for obligations to the Subcontractor arising after assumption or assignment. Should the District so elect, the Contractor shall execute and deliver all documents and take all steps, including the legal assignment of its contractual rights, as the District may require, for the purpose of fully vesting in the District the rights and benefits of its Subcontractor under Subcontracts or other obligations or commitments. All payments due the Contractor hereunder shall be subject to a right of offset by the District for expenses and damages suffered by the District as a result of any default, acts, or omissions of the Contractor. Contractor must include this assignment provision in all of its contracts with its Subcontractors.

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

24.5 Emergency Termination of Public Contracts Act of 1949

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

24.5.1.1 Section 4410 of the Government Code states:

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

24.5.1.2 Section 4411 of the Government Code states:

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

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

24.6 Suspension of Work

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

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

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

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

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

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

25. CLAIMS PROCESS

25.1 Obligation to File Claims for Disputed Work

25.1.1 Should Contractor otherwise seek extra time or compensation for any reason whatsoever ("Disputed Work"), then Contractor shall first follow procedures set forth in the Contract Documents including, without limitation, Articles 15, 16 and 17, all of which are conditions precedent to submitting a Claim pursuant to Article 25. A Notice of Delay or Proposed Change Order are less formal procedures that proceed the formal claim and do not constitute a Claim. A Claim also does not include correspondence, RFIs, vouchers, invoices, progress payment applications, or other routine or authorized form of requests for progress payments in compliance with the Contract. If a dispute remains, then Contractor shall give written notice to District that expressly invokes this Article 25 within the time limits set forth herein.

25.1.2 Contractor's sole and exclusive remedy for Disputed Work is to file a written claim setting forth Contractor's position as required herein within the time limits set forth herein.

25.2 Duty to Perform during Claim Process

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

25.3 Definition of Claim

25.3.1 Pursuant to Public Contract Code section 9204, the term "Claim" means a separate demand by the Contractor sent by registered mail or certified mail with return receipt requested, for one or more of the following:

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

25.3.1.2 Payment by the District of money or damages arising from work done by, or on behalf of, the Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or to which Contractor is not otherwise entitled to; or

25.3.1.3 An amount of payment disputed by the District.

25.4 Claims Presentation

25.4.1 Form and Contents of Claim

25.4.1.1 If Contractor intends to submit a Claim for an increase in the Contract Price and/or Contract Time for any reason including, without limitation, the acts of District or its agents, Contractor shall, within thirty (30) days after the event giving rise to the Claim, give notice of the Claim ("Notice of Potential Claim") in writing specifically identifying Contractor is invoking this Article 25 Claims Presentation. The Notice of Potential Claim shall provide Contractor's preliminary request for an adjustment to the Contract Price and/or Contract Time, with a description of the grounds therefore.

25.4.1.2 Within thirty (30) days after serving the written Notice of Potential Claim, Contractor shall provide a Claim including an itemized statement of the details and amounts of its Claim for any increase in the Contract Price of Contract Time as provided below, including a Time Impact Analysis and any and all other documentation substantiating Contractor's claimed damages:

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

25.4.1.2.2 Citation to provisions in the Contract Documents, statute sections, and/or case law entitling Contractor to an increase in the Contract Price or Contract Time;

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

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

25.4.1.2.5 The line-item costs for labor, material, and/or equipment, if applicable, for all cost impacts priced like a change order according to Article 17 and must be updated monthly as to cost and entitlement if a continuing claim.

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

25.4.1.3.1 The undersigned Contractor certifies under penalty of perjury that the attached dispute is made in good faith; that the supporting data is accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the adjustment for which Contractor believes the District is liable; and that I am duly authorized to certify the dispute on behalf of the Contractor.

25.4.1.3.2 Furthermore, Contractor understands that the value of the attached dispute expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from the Work performed on the Project, additional time required on the Project and/or resulting from delay to the Project including, without limitation, cumulative impacts. Contractor may not separately recover for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

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

25.4.3 Failure to timely submit a Claim and the requisite supporting documentation shall constitute a waiver of Contractor's claim(s) against the District and Contractor's Claim(s) for compensation or an extension of time shall be deemed waived, released, and discharged as to any entitlement for adjustment to Contract Price and/or Contract Time.

25.5 Claim Resolution pursuant to Public Contract Code section 9204

Contractor may request to waive the claims procedure under Public Contract Code section 9204 and proceed directly to the commencement of a civil action or binding arbitration. If Contractor chooses to proceed, Contractor shall comply with the following steps:

25.5.1 STEP 1:

25.5.1.1 Upon receipt of a Claim by registered or certified mail, return receipt requested, including the documents necessary to substantiate it, the District shall conduct a reasonable review of the Claim and, within a period not to exceed 45 days, shall provide the Contractor a written statement identifying what portion of the Claim is disputed and what portion is undisputed. Upon receipt of a Claim, the District and Contractor may, by mutual agreement, extend the time period to provide a written statement. If the District needs approval from its governing body to provide the Contractor a written statement identifying the disputed portion and the undisputed portion of the Claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of Claim sent by registered mail or certified mail, return receipt requested, the District shall have up to three (3) days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension, expires to provide Contractor a written statement identifying the disputed portion and the undisputed portion.

25.5.1.1.1 Any payment due on an undisputed portion of the Claim shall be processed and made within 60 days after the District issues its written statement. Amounts not paid in a timely manner as required by this section, section 25.4, shall bear interest at seven percent (7%) per annum.

25.5.1.2 Upon receipt of a Claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable. In this instance, District and Contractor must comply with the sections below regarding Public Contract Code section 20104 et seq. and Government Code Claim Act Claims.

25.5.1.3 If the District fails to issue a written statement, or to otherwise meet the time requirements of this section, this shall result in the Claim being deemed rejected in its entirety. A Claim that is denied by reason of the District's failure to have responded to a Claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the Claim or the responsibility or qualifications of Contractor.

25.5.2 STEP 2:

25.5.2.1 If Contractor disputes the District's written response, or if the District fails to respond to a Claim within the time prescribed, Contractor may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the District shall schedule a meet and confer conference within 30 days for settlement of the dispute. Within 10 business days following the conclusion of the meet and confer conference, if the Claim or any portion of the Claim remains in dispute, the District shall provide the Contractor a written statement identifying the portion of the Claim that remains in dispute and the portion that is undisputed.

25.5.2.1.1.1 Any payment due on an undisputed portion of the Claim shall be processed and made within 60 days after the District issues its written statement. Amounts not paid in a timely manner as required by this section, section 25.4, shall bear interest at seven percent (7%) per annum.

25.5.3 STEP 3:

25.5.3.1 Any disputed portion of the Claim, as identified by Contractor in writing, shall be submitted to nonbinding mediation, with the District and Contractor sharing the associated costs equally. The District and Contractor shall mutually agree to a mediator within 10 business days after the disputed portion of the Claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the Claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the Claim remaining in dispute shall be subject to applicable procedures outside this section.

25.5.3.1.1 For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

25.5.3.2 Unless otherwise agreed to by the District and Contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Public Contract Code section 20104.4 to mediate after litigation has been commenced.

25.5.4 STEP 4:

25.5.4.1 If mediation under this section does not resolve the parties' dispute, the District may, but does not require arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program.

25.6 Subcontractor Pass-Through Claims

25.6.1 If a subcontractor or a lower tier subcontractor lacks legal standing to assert a claim against a District because privity of contract does not exist, the contractor may present to the District a Claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on his or her own behalf or on behalf of a lower tier subcontractor, that Contractor present a Claim for work which was performed by the subcontractor or by a lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the Claim be presented to the District shall furnish reasonable documentation to support the Claim.

25.6.2 Within 45 days of receipt of this written request from a subcontractor, Contractor shall notify the subcontractor in writing as to whether the Contractor presented the Claim to the District and, if Contractor did not present the Claim, provide the subcontractor with a statement of the reasons for not having done so.

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

25.7 Government Code Claim Act Claim

25.7.1 If a claim, or any portion thereof, remains in dispute upon satisfaction of all applicable Claim Resolution requirements the Contractor shall comply with all claims presentation requirements as provided in Chapter 1 (commencing with section 900) and Chapter 2 (commencing with section 910) of Part 3 of Division 3.6 of Title 1 of Government Code as a condition precedent to the Contractor's right to bring a civil action against the District.

25.7.2 Contractor shall bear all costs incurred in the preparation, submission and administration of a Claim. Any claims presented in accordance with the Government Code must affirmatively indicate Contractor's prior compliance with the claims procedure herein of the claims asserted.

25.7.3 For purposes of those provisions, the running of the time within which a claim pursuant to Public Contract Code section 20104.2 only must be presented to the District shall be tolled from the time the claimant submits his or her written claim pursuant to subdivision (a) until the time that claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

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

25.8.1 In the event of a disagreement between the parties as to performance of the Work, the interpretation of this Contract, or payment or nonpayment for Work performed or not performed, the parties shall attempt to resolve all claims of three hundred seventy-five thousand dollars ($375,000) or less which arise between Contractor and District by those procedures set forth in Public Contract Code section 20104, et seq., to the extent applicable.

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

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

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

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

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

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

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

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

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

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

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

25.8.1.8 The District shall not fail to pay money as to any portion of a Claim which is undisputed except as otherwise provided in the Contract Documents. In any suit filed pursuant to this section, the District shall pay interest due at the legal rate on any arbitration award or judgment. Interest shall begin to accrue on the date the suit is filed in a court of law.

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

25.9 Claim Procedure Compliance

25.9.1 Failure to submit and administer claims as required in Article 25 shall waive Contractor's right to claim on any specific issues not included in a timely submitted claim. Claim(s) not raised in a timely protest and timely claim submitted under this Article 25 may not be asserted in any subsequent litigation, Government Code Claim, or legal action.

25.9.2 District shall not be deemed to waive any provision under this Article 25, if at District's sole discretion, a claim is administered in a manner not in accord with this Article 25. Waivers or modifications of this Article 25 may only be made by a signed change order approved as to form by legal counsel for both District and Contractor; oral or implied modifications shall be ineffective.

25.10 Claim Resolution Non-Applicability

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

25.10.1.1 Personal injury, wrongful death or property damage claims;

25.10.1.2 Latent defect or breach of warranty or guarantee to repair;

25.10.1.3 Stop payment notices;

25.10.1.4 District's rights set forth in the Article on Suspension and Termination;

25.10.1.5 Disputes arising out of labor compliance enforcement by the Department of Industrial Relations; or

25.10.1.6 District rights and obligations as a public entity set forth in applicable statutes; provided, however, that penalties imposed against a public entity by statutes, including, but not limited to, Public Contract Code sections 20104.50 and 7107, shall be subject to the Claim Resolution requirements provided in this Article.

25.11 Attorney's Fees

25.11.1 Should litigation be necessary to enforce any terms or provisions of this Agreement, then each party shall bear its own litigation and collection expenses, witness fees, court costs, and attorney's fees.

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

26.1 Labor Compliance and Enforcement

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

26.2 Wage Rates, Travel, and Subsistence

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

26.2.2 Holiday and overtime work, when permitted by law, shall be paid for at the general prevailing rate of per diem wages for holiday and overtime work on file with the Director of the Department of Industrial Relations, unless otherwise specified. The holidays upon which those rates shall be paid need not be specified by the District, but shall be all holidays recognized in the applicable collective bargaining agreement. If the prevailing rate is not based on a collectively bargained rate, the holidays upon which the prevailing rate shall be paid shall be as provided in Section 6700 of the Government Code.

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

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

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

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

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

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

26.3 Hours of Work

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

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

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

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

26.4 Payroll Records

26.4.1 Contractor shall upload, and shall cause each Subcontractor performing any portion of the Work under this Contract to upload, an accurate and complete certified payroll record ("CPR") electronically using DIR's eCPR System by uploading the CPRs by electronic XML file or entering each record manually using the DIR's iform (or current form) online on no less than every 30 days while Work is being performed and within 30 days after the final day of Work performed on the Project and within ten (10) days of any request by the District or Labor Commissioner at http://www.dir.ca.gov/Public-Works/Certified-Payroll-Reporting.html or current application and URL, showing the name, address, social security number, work classification, straight-time, and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by the Contractor and/or each Subcontractor in connection with the Work.

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

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

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

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

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

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

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

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

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

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

26.4.6 **[RESERVED]**

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, 9th floor, San Francisco, California 94102.

26.7 Non-Discrimination

26.7.1 Contractor herein agrees to comply with the provisions of the California Fair Employment and Housing Act as set forth in part 2.8 of division 3 of the California Government Code, commencing at section 12900; the Federal Civil Rights Act of 1964, as set forth in Public Law 88-352, and all amendments thereto; Executive Order 11246; and all administrative rules and regulations found to be applicable to Contractor and Subcontractor.

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 (Lab. Code, § 6300 et seq.; 8 Cal. Code of Regs., § 330 et seq.).

27. [RESERVED]

28. MISCELLANEOUS

28.1 Assignment of Antitrust Actions

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

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

28.1.2 Section 4552 of the Government Code states:

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

28.1.3 Section 4553 of the Government Code states:

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

28.1.4 Section 4554 of the Government Code states:

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

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

28.2 Excise Taxes

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

28.3 Taxes

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

28.4 Shipments

Contractor is responsible for any or all damage or loss to shipments until delivered and accepted on Site, as indicated in the Contract Documents. There must be no charge for containers, packing, unpacking, drayage, or insurance. The total Contract Price shall be all inclusive (including sales tax) and no additional costs of any type will be considered.

28.5 Compliance with Government Reporting Requirements

If this Contract is subject to federal or other governmental reporting requirements because of federal or other governmental financing in whole or in part for the Project of which it is part, or for any other reason, 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 Keys. Upon request, the District may, at its own discretion, provide keys to the school site for the convenience of the Contractor. The Contractor agrees to pay all expenses to re-key the entire school site and all other affected District buildings if the keys are lost or stolen, or if any unauthorized party obtains a copy of the key or access to the school.

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

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

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

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

2.7 **No Work during Student Testing**. Contractor shall, at no additional cost to the District and at the District's request, coordinate its Work to not disturb District students including, without limitation, not performing any Work when students at the Site are taking State or Federally-required tests.

3. Badge Policy for Contractors

All Contractors doing work for the District will provide their workers with identification badges. These badges will be worn by all members of the Contractor's staff who are working in a District facility.

3.1 Badges must be filled out in full and contain the following information:

3.1.1 Name of Contractor

3.1.2 Name of Employee

3.1.3 Contractor's address and phone number

3.2 Badges are to be worn when the Contractor or his/her employees are on site and must be visible at all times. Contractors must inform their employees that they are required to allow District employees, the Architect, the Construction Manager, the Program Manager, or the Project Inspector to review the information on the badges upon request.

3.3 Continued failure to display identification badges as required by this policy may result in the individual being removed from the Project or assessment of fines against the Contractor.

4. Weather Days

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

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

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. The limits of insurance shall not be less than:

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

15. COVID-19 Safety Requirements

Contractor shall, at its cost, timely comply with all applicable federal, State, and local requirements relating to COVID-19 or other public health emergency/epidemic/pandemic. Further, except to the extent the Order provides otherwise, Contractor and Contractor’s personnel, subcontractors and suppliers shall continue to comply with all applicable terms in the California Department of Public Health’s State Public Health Officer Orders.

16. COVID-19 Vaccination/Testing Requirements

Vaccination Requirements

Contractor shall fill out, sign, date and submit to District the COVID-19 Vaccination/Testing Certification Form, attached hereto as **Attachment “A.”**

According to the August 11, 2021, California Department of Public Health (“CDPH”) State Public Health Officer Order (“Order”), a person is “fully vaccinated” for COVID-19 if two weeks or more have passed since they have received the second dose in a 2-dose series (Pfizer-BioNTech or Moderna or vaccine authorized by the World Health Organization), or two weeks or more have passed since they received a single-dose vaccine (Johnson and Johnson[J&J]/Janssen).

Pursuant to the CDPH Guidance for Vaccine Records Guidelines & Standards, Contractor shall only accept the following as proof of vaccination:

(a) COVID-19 Vaccination Record Card (issued by the Department of Health and Human Services Centers for Disease Control & Prevention or WHO

Yellow Card which includes name of person vaccinated, type of vaccine provided and date last dose administered);

(b) a photo of a Vaccination Record Card as a separate document;

(c) a photo of a Vaccination Record Card stored on a phone or electronic device;

(d) documentation of COVID-19 vaccination from a health care provider;

(e) digital record that includes a QR code that when scanned by a SMART Health Card reader displays to the reader name, date of birth, vaccine dates and vaccine type; or

(f) documentation of vaccination from other contracted employers who follow these vaccination records guidelines and standards.

In the absence of knowledge to the contrary, Contractor may accept the documentation presented in (a) through (f) above as valid.

Contractor shall have a plan in place for tracking verified Contractor personnel vaccination status. Records of vaccination verification must be made available, upon request, to the local health jurisdiction for purposes of case investigation.

Contractor personnel, including any and all tiers of subcontractor, supplier, and any other personnel entering the Project site, who are not fully vaccinated, or for whom vaccine status is unknown or documentation is not provided, must be considered unvaccinated.

Weekly Testing Requirements

Contractor shall ensure that Contractor personnel, including any and all tiers of subcontractor, supplier, and any other worker entering the Project site, who are unvaccinated or who are not fully vaccinated are required to undergo diagnostic screening testing, as specified below:

(a) Contractor personnel may be tested with either antigen or molecular tests to satisfy this requirement, but unvaccinated or incompletely vaccinated workers must be tested at least once weekly with either PCR testing or antigen testing. Any PCR (molecular) or antigen test used must either have Emergency Use Authorization by the U.S. Food and Drug Administration or be operating per the Laboratory Developed Test requirements by the U.S. Centers for Medicare and Medicaid Services.

(b) Unvaccinated or not fully vaccinated Contractor personnel must also observe all other infection control requirements, and are not exempted from the testing requirement even if they have a medical contraindication to vaccination, since they are still potentially able to spread the illness. Previous history of COVID-19 from which the individual recovered more than 90 days earlier, or a previous positive antibody test for COVID-19, do not waive this requirement for testing.

Contractor shall have a plan in place for tracking test results and conducting workplace contact tracing, and must report results to local public health departments, if applicable.

[ATTACHMENT “A” ON NEXT PAGE]

ATTACHMENT “A”
COVID-19 VACCINATION/TESTING CERTIFICATION

Contractor: ____

The California Department of Public Health (“CDPH”) requires, pursuant to its August 11, 2021, Order (“Order”), that all public and private schools serving students in transitional kindergarten through grade twelve, unless exempt, are required to verify the vaccine status of all K-12 school workers, effective October 15, 2021. Further, pursuant to the Order, all such schools are required to verify that all workers are either fully vaccinated or undergo weekly diagnostic testing.

In light of these CDPH requirements, Contractor certifies that the following entity:

____

has verified that the Contractor personnel providing services at District’s Project site(s):

☐ Have all been fully vaccinated in accordance with the CDPH Order.

☐ Have not all been fully vaccinated, but those who are unvaccinated or not fully vaccinated undergo weekly diagnostic testing in accordance with the CDPH Order.

☐ Have not been fully vaccinated and do not undergo weekly diagnostic testing in accordance with the CDPH Order.

Contractor understands that the District’s Project site will need to comply with the CDPH Order’s COVID-19 requirements for fully vaccinated personnel or unvaccinated personnel. Personnel who are not fully vaccinated or decline to state their vaccination status will be treated as unvaccinated, and Contractor will comply with the CDPH Order, and all applicable state and local laws for vaccinated and unvaccinated personnel.

CERTIFICATION

I, ________________________________, certify that I am Contractor’s________________ and that I have made a diligent effort to ascertain the facts with regard to the representations made herein.

Date: ____

Proper Name of Contractor: ____

Signature: ____

Print Name: ____

Title: ____

END OF DOCUMENT

DOCUMENT 00 73 56

HAZARDOUS MATERIALS PROCEDURES & REQUIREMENTS

1. Summary

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

2. Notice of Hazardous Waste or Materials

a. Contractor shall give notice in writing to the District, the Construction Manager, and the Architect promptly, before any of the following materials are disturbed, and in no event later than twenty-four (24) hours after first observance, of any:

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

(2) Other material that may present a substantial danger to persons or property exposed thereto in connection with Work at the site.

b. Contractor's written notice shall indicate whether the hazardous waste or material was shown or indicated in the Contract Documents to be within the scope of Work, and whether the materials were brought to the site by Contractor, its Subcontractors, suppliers, or anyone else for whom Contractor is responsible. As used in this section the term "hazardous materials" shall include, without limitation, asbestos, lead, Polychlorinated biphenyl (PCB), petroleum and related hydrocarbons, and radioactive material.

c. In response to Contractor's written notice, the District shall investigate the identified conditions.

d. If the District determines that conditions do not involve hazardous materials or that no change in terms of Contract is justified, the District shall so notify Contractor in writing, stating reasons. If the District and Contractor cannot agree on whether conditions justify an adjustment in Contract Price or Contract Time, or on the extent of any adjustment, Contractor shall proceed with the Work as directed by the District.

e. If after receipt of notice from the District, Contractor does not agree to resume Work based on a reasonable belief it is unsafe, or does not agree to resume Work under special conditions, then District may order such portion of Work that is in connection with such hazardous condition or such affected area to be deleted from the Work, or performed by others, or District may invoke its rights to terminate the Contract in whole or in part. District will determine entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Time as a result of deleting such portion of Work, or performing the Work by others.

f. If Contractor stops Work in connection with any hazardous condition and in any area affected thereby, Contractor shall immediately redeploy its workers, equipment, and materials, as necessary, to other portions of the Work to minimize delay and disruption.

3. Additional Warranties and Representations

a. Contractor represents and warrants that it, its employees, and its subcontractors and their employees, shall at all times have the required levels of familiarity with the Site and the Work, training, and ability to comply fully with all applicable laws and contractual requirements for safe and expeditious performance of the Work, including whatever training is or may be required regarding the activities to be performed (including, but not limited to, all training required to address adequately the actual or potential dangers of Contract performance).

b. Contractor represents and warrants that it, its employees, and its subcontractors and their employees, shall at all times have and maintain in good standing any and all certifications and licenses required by applicable federal, state, and other governmental and quasi-governmental requirements applicable to the Work.

c. Contractor represents and warrants that it has studied carefully all requirements of the Specifications regarding procedures for demolition, hazardous waste abatement, or safety practices, specified in the Contract, and prior to submitting its bid, has either (a) verified to its satisfaction that the specified procedures are adequate and sufficient to achieve the results intended by the Contract Documents, or (b) by way of approved "or equal" request or request for clarification and written Addenda, secured changes to the specified procedures sufficient to achieve the results intended by the Contract Documents. Contractor accepts the risk that any specified procedure will result in a completed Project in full compliance with the Contract Documents.

4. Monitoring and Testing

a. District reserves the right, in its sole discretion, to conduct air monitoring, earth monitoring, Work monitoring, and any other tests (in addition to testing required under the agreement or applicable law), to monitor Contract requirements of safe and statutorily compliant work methods and (where applicable) safe re-entry level air standards under state and federal law upon completion of the job, and compliance of the work with periodic and final inspection by public and quasi-public entities having jurisdiction.

b. Contractor acknowledges that District has the right to perform, or cause to be performed, various activities and tests including, but not limited to, pre-abatement, during abatement, and post-abatement air monitoring, that District shall have no obligation to perform said activities and tests, and that a portion of said activities and tests may take place prior to the completion of the Work by Contractor. In the event District elects to perform these activities and tests, Contractor shall afford District ample access to the Site and all areas of the Work as may be necessary for the performance of these activities and tests. Contractor will include the potential impact of these activities or tests by District in the Contract Price and the Scheduled Completion Date.

c. Notwithstanding District's rights granted by this paragraph, Contractor may retain its own industrial hygiene consultant at Contractor's own expense and may collect samples and may perform tests including, but not limited to, pre-abatement, during abatement, and post-abatement personal air monitoring, and District reserves the right to request documentation of all such activities and tests performed by Contractor relating to the Work and Contractor shall immediately provide that documentation upon request.

5. Compliance with Laws

a. Contractor shall perform safe, expeditious, and orderly work in accordance with the best practices and the highest standards in the hazardous waste abatement, removal, and disposal industry, the applicable law, and the Contract Documents, including, but not limited to, all responsibilities relating to the preparation and return of waste shipment records, all requirements of the law, delivering of all requisite notices, and obtaining all necessary governmental and quasi-governmental approvals.

b. Contractor represents that it is familiar with and shall comply with all laws applicable to the Work or completed Work including, but not limited to, all federal, state, and local laws, statutes, standards, rules, regulations, and ordinances applicable to the Work relating to:

(1) The protection of the public health, welfare and environment;

(2) Storage, handling, or use of asbestos, PCB, lead, petroleum based products, radioactive material, or other hazardous materials;

(3) The generation, processing, treatment, storage, transport, disposal, destruction, or other management of asbestos, PCB, lead, petroleum, radioactive material, or hazardous waste materials or other waste materials of any kind; and

(4) The protection of environmentally sensitive areas such as wetlands and coastal areas.

6. Disposal

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

b. Contractor shall develop and implement a system acceptable to District to track hazardous waste from the Site to disposal, including appropriate "Hazardous Waste Manifests" on the EPA form, so that District may track the volume of waste it put in each landfill and receive from each landfill a certificate of receipt.

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

7. Permits

a. Before performing any of the Work, and at such other times as may be required by applicable law, Contractor shall deliver all requisite notices and obtain the approval of all governmental and quasi-governmental authorities having jurisdiction over the Work. Contractor shall submit evidence satisfactory to District that it and any disposal facility:

(1) have obtained all required permits, approvals, and the like in a timely manner both prior to commencement of the Work and thereafter as and when required by applicable law; and

(2) are in compliance with all such permits, approvals and the regulations.

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

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

8. Indemnification

To the fullest extent permitted by law, the indemnities and limitations of liability expressed throughout the Contract Documents apply with equal force and effect to any claims or liabilities imposed or existing by virtue of the removal, abatement, and disposal of hazardous waste. This includes, but is not limited to, liabilities connected to the selection and use of a waste disposal facility, a waste transporter, personal injury, property damage, loss of use of property, damage to the environment or natural resources, or "disposal" and "release" of materials associated with the Work (as defined in 42 U.S.C. § 960l *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

SECTION 01 11 00

SUMMARY OF WORK

PART 1 - GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of this Contract for Red Hill Community Sports Park Renovation and other items not specifically mentioned herein.

B. The Tamalpais Union High School District is working on a program to upgrade existing athletic facilities. The Redhill Community Sports Park Renovation project is the resurfacing of an existing multi-use sports field. Additional renovations include some replacement of existing open-mesh chain link fences and gates without windscreens or privacy slats, as well as improved retaining walls and ramp, and barrier rails. Included in scope of work will also be improvements to the accessible / egress routes and improvements to the existing field.

C. The work includes but is not limited to: tree protection, location of existing underground utilities, dust and noise control, demolition, staking, clearing and grubbing, earthwork, trenching, site preparation, erosion control, subgrade preparation, drilled piers, concrete, , signage, chain link fencing, and all work as shown by these drawings and specifications.

D. The Work shall include all the work as shown and specified except work indicated "N.I.C." or "Not in Contract" or "Future."

1.2 CONTRACTS

A. The Work will be under a single lump sum contract.

B. The Work indicated "N.I.C." or "Not in Contract" will be provided by the Owner directly or under separate contract.

1.3 PROJECT MILESTONES

A.	March 10, 2023 - June 29, 2023:	Material Procurement
B.	June 2, 2023:	Close the Site
C.	June 5, 2023:	Mobilize on Site
D.	August 4, 2023:	Complete Construction
E.	August 7, 2023:	Open the Site
F.	August 8, 2023 - September 18, 2023:	Close Out

END OF SECTION

DOCUMENT 01 25 13

PRODUCT OPTIONS AND SUBSTITUTIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

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

A. Instructions to Bidders;

B. General Conditions, including, without limitation, Substitutions For Specified Items; and

C. Special Conditions.

1.02 SUBSTITUTIONS OF MATERIALS AND EQUIPMENT:

A. Catalog numbers and specific brands or trade names followed by the designation "or equal" are used in conjunction with material and equipment required by the Specifications to establish the standards of quality, utility, and appearance required. Substitutions which are equal in quality, utility, and appearance to those specified may be reviewed subject to the provisions of the General Conditions.

B. Wherever more than one manufacturer's product is specified, the first-named product is the basis for the design used in the work and the use of alternative-named manufacturers' products or substitutes may require modifications in that design. If such alternatives are proposed by Contractor and are approved by the District and/or the Architect, Contractor shall assume all costs required to make necessary revisions and modifications of the design resulting from the substitutions requested by the Contractor.

C. When materials and equipment are specified by first manufacturer's name and product number, second manufacturer's name and "or approved equal," supporting data for the second product, if proposed by Contractor, shall be submitted in accordance with the requirements for substitutions.

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

DOCUMENT 01 26 00

CHANGES IN THE WORK

CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE PROVISIONS IN THE GENERAL CONDITIONS RELATED TO CHANGES AND/OR REQUESTS FOR CHANGES

END OF DOCUMENT

DOCUMENT 01 29 00

APPLICATION FOR PAYMENT AND CONDITIONAL AND UNCONDITIONAL WAIVER AND RELEASE FORMS

CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS IN THE GENERAL CONDITIONS RELATED TO APPLICATIONS FOR PAYMENT AND/OR PAYMENTS.

CONDITIONAL WAIVER AND RELEASE ON PROGRESS PAYMENT

(Civil Code Section 8132)

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Name of Claimant: ____
Name of Customer: ____
Job Location: ____
Owner: ____
Through Date: ____

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: ____
Amount of Check: $____
Check Payable to: ____

Exceptions

This document does not affect any of the following:

(1) Retentions.
(2) Extras for which the claimant has not received payment.
(3) The following progress payments for which the claimant has previously given a conditional waiver and release but has not received payment:

Date(s) of waiver and release:________________________________
Amount(s) of unpaid progress payment(s): $___________________

(4) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.

Claimant's Signature:____
Claimant's Title:____
Date of Signature:____

UNCONDITIONAL WAIVER AND RELEASE ON PROGRESS PAYMENT

(Civil Code Section 8134)

NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

Name of Claimant: ____
Name of Customer: ____
Job Location: ____
Owner: ____
Through Date: ____

Unconditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has received the following progress payment: $_________________.

Exceptions

This document does not affect any of the following:

(1) Retentions.
(2) Extras for which the claimant has not received payment.
(3) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.

Claimant's Signature:____
Claimant's Title:____
Date of Signature:____

CONDITIONAL WAIVER AND RELEASE
ON FINAL PAYMENT
(Civil Code Section 8136)

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Name of Claimant: ____

Name of Customer: ____

Job Location: ____

Owner: ____

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: ______________________________________

Amount of Check: $______________________________________

Check Payable to: ______________________________________

Exceptions

This document does not affect any of the following: ____________________________

Disputed claims for extras in the amount of: $__________________________________

Claimant's Signature: ______________________________________

Claimant's Title: ______________________________________

Date of Signature: ______________________________________

UNCONDITIONAL WAIVER AND RELEASE ON FINAL PAYMENT

(Civil Code Section 8138)

NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

Name of Claimant: ____

Name of Customer: ____

Job Location: ____

Owner: ____

Unconditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for all labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has been paid in full.

Exceptions

This document does not affect any of the following: ________________________

Disputed claims for extras in the amount of: $_________________________

Claimant's Signature: ____

Claimant's Title: ____

Date of Signature: ____

SECTION 01 31 19

PROJECT MANAGEMENT & COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project coordination.
2. Pre-construction conference.
3. Progress meetings.
4. Project Schedule.
5. Three Week Short Interval Schedules.
6. Delays and extensions of time.
7. Correspondence and notices.

1.2 PROJECT COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections to assure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

1.3 PRECONSTRUCTION CONFERENCE

A. After Notice of Award, a Pre-construction Conference to discuss Project Work will be held at a time and location designated by the District.

B. Agenda:

1. Submission of Contractor-signed Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of subcontractors, list of products, schedule of values and progress schedule.
5. Designation of personnel representing parties in Contract and the Landscape Architect.
6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal requests, Change Orders and contract closeout procedures.
7. Schedule.

C. Unless followed up in writing by the Owner, verbal authorizations or instructions by anyone present is not binding.

D. Attendance Required:

1. Owner.
2. Landscape Architect.
3. Contractor.
4. Inspector.
5. Major subcontractors.

1.4 PROGRESS MEETINGS

A. At a time designated by Owner, Periodic Progress Meetings will be held at a location to be determined.

B. Agenda: The purpose of these meetings is to discuss schedule, progress, coordination, submittals, and job-related problems.
   1. Review minutes of previous meetings.
   2. Review of Work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems that impede planned progress.
   5. Review of submittals schedule and status of submittals.
   6. Review of delivery schedules.
   7. Special Project Procedures.
   8. Maintenance of progress schedule.
   9. Corrective measures to regain projected schedules.
   10. Planned progress during succeeding work period.
   11. Coordination of projected progress.
   12. Maintenance of quality and work standards.
   13. Effect of proposed changes on progress schedule and coordination.
   14. Other business relating to Work.

C. The Construction Manager will conduct the meetings, prepare and distribute meeting notes.

D. Verbal authorizations or acknowledgments by anyone present will not be binding unless followed up in writing by authorized representatives of the Owner or Contractor.

E. Attendance:
   1. Owner.
   2. Landscape Architect.
   3. Construction Manager
   4. Contractor.
   5. Contractor’s Superintendent.
   6. Inspector.
   7. Major Subcontractors.
   8. Suppliers and others as deemed necessary by the District.

F. Contractor will be responsible for notifying subcontractors and supplier of their required attendance.

1.5 CONSTRUCTION SCHEDULE

A. The Contractor shall, within 10 calendar days after Notice to Proceed is issued, furnish the Construction Manager with three copies of a schedule that addresses the work required during the Contract as well as one electronic version. The schedule must be developed using the Critical Path Method (CPM) and shall be produced using Primavera P6 or an equivalent program. The schedules shall include the following information as a minimum:
   1. Details of activities required for mobilization and start of Project.
   2. A plan for completion of work in sufficient detail to allow observation and monitoring by the Construction Manager. Any activity longer than two weeks, with the exception of submittal and procurement activities, should be broken down into phases two weeks or less in length.

3. Long lead procurement requirements.
4. Submittal and shop drawings preparation and review times. Indicate critical dates for submission of specified shop drawings, product data, samples, and certificates. Allow 14 calendar days for review of submittals by Landscape Architect.
5. Requests for Information and review times. Indicate critical dates for submission of Requests For Information. Allow five business days for review of Requests For Information by Landscape Architect.
6. Equipment installation and testing.
7. Include decision dates for selection of colors/finishes.
8. Duration of all activities.
9. Dependencies and logic between activities.
10. Owner furnished materials and equipment, if any.
11. The CPM schedule will be time-scaled and cost loaded. The cost for performing each activity shall include all labor, material and equipment, including overhead and profit. The sum of all costs of all activities shall equal the total contract value.
12. The Contractor's Schedule shall be submitted with acknowledgements signed and authorized officials of each subcontractor listed in the bid, confirming their review of the schedule and their ability to perform their portion of the Work according to said Schedule.

B. The schedule shall be the basis for establishing starting and completing dates of Work for the Project.

C. Conform to accepted schedule, and arrange work in such a manner that it will be installed in accordance with the schedule

D. Provide a monthly update to the schedule at the time of payment request in accordance with the General Conditions.

E. Coordinate letting of subcontractors, material purchases, delivery of materials, sequence of operations, and similar activities to conform to accepted schedule, and furnish proof of conformance as may be required by Owner.

F. The Contractor shall be responsible for planning and scheduling the Work and monitoring progress of the Work with respect to the schedule. The Contractor shall be responsible for scheduling all work activities, including those of its subcontractors. The Schedule shall be feasible, workable and reasonable for the work, and shall be the Contractor's plan of construction for completing the contract work within the specified time periods.

1. On-site production activity durations shall be the total of the actual days required to perform that activity and shall not include non-production time.
2. Failure of the Construction Schedule to include any element of the work required for the performance of this contract, or any inaccuracy in the Construction Schedule, will not relieve the Contractor from its responsibility for accomplishing all the work required for a complete contract within the time specified and will not constitute grounds for delay.

G. The Construction Manager will review the Contractor's proposed Construction Schedule within 14 calendar days and will provide comments and make inquires regarding the schedule. The Contractor shall re-submit its revised Construction Schedule for review after incorporating the necessary changes and revisions. The revised Construction Schedule shall be submitted to the Construction Manager within 7 calendar days of the issuance of the Construction Manager's comments.

H. The Construction Schedule, upon acceptance, will become the basis for determining schedule compliance, for determining the impact of changes to the Contract and delays to the Work.

I. The Schedule shall be prepared and updated as shown in the General Conditions.

1.6 THREE WEEK SHORT INTERVAL SCHEDULE

A. Short Interval Scheduling will be used throughout the on-site construction process.

B. The interval will be three weeks and will include the week submitted and two weeks thereafter.

C. The schedules will be in sufficient detail to evaluate daily milestones and will correspond to the monthly updated Construction Schedule.

D. The Contractor shall prepare its short interval schedule and deliver several copies of it to each job site meeting where it will be discussed, revised if necessary, and distributed to parties present.

1.7 DELAYS AND EXTENSIONS OF TIME

A. The scheduled completion date shall be the same as the contractual completion date.

B. Delays and extensions of time are in accordance with the General Conditions.

1.8 CORRESPONDENCE AND NOTICES

A. Clearly identify correspondence, notices and submittals with project name, subject and detailed references to Drawings and Specifications.

B. Notify the Construction Manager two calendar days in advance of required inspection.

END OF SECTION

DOCUMENT 01 32 13

SCHEDULING OF WORK

PART I – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions;

B. Special Conditions;

C. Summary of Work; and

D. Submittals.

1.02 SECTION INCLUDES:

A. Scheduling of Work under this Contract shall be performed by Contractor in accordance with requirements of this Section.

(1) Development of schedule, cost and resource loading of the schedule, monthly payment requests, and project status reporting requirements of the Contract shall employ computerized Critical Path Method ("CPM") scheduling ("CPM Schedule").

(2) CPM Schedule shall be cost loaded based on Schedule of Values as approved by District.

(3) Submit schedules and reports as specified in the General Conditions.

B. Upon Award of Contract, Contractor shall immediately commence development of Initial and Original CPM Schedules to ensure compliance with CPM Schedule submittal requirements.

1.03 CONSTRUCTION SCHEDULE:

A. Within ten (10) days of being awarded the Contract and before request for first progress payment, the Contractor shall prepare and submit to the Project Manager a construction progress schedule conforming to the Milestone Schedule below.

B. The Construction Schedule shall be continuously updated, and an updated schedule shall be submitted with each application for progress payment. Each revised schedule shall indicate the work actually accomplished during the previous period and the schedule for completion of the remaining work.

1.04 QUALIFICATIONS

A. Contractor shall employ experienced scheduling personnel qualified to use the latest version of **[i.e., Primavera Project Planner]**. Experience level required is set forth below. Contractor may employ such personnel directly or may employ a consultant for this purpose.

(1) The written statement shall identify the individual who will perform CPM scheduling.

(2) Capability and experience shall be verified by description of construction projects on which individual has successfully applied computerized CPM.

(3) Required level of experience shall include at least two (2) projects of similar nature and scope with value not less than three-fourths (¾) of the Total Bid Price of this Project. The written statement shall provide contact persons for referenced projects with current telephone and address information.

B. District reserves the right to approve or reject Contractor's scheduler or consultant at any time. District reserves the right to refuse replacing of Contractor's scheduler or consultant, if District believes replacement will negatively affect the scheduling of Work under this Contract.

1.05 GENERAL

A. Progress Schedule shall be based on and incorporate milestone and completion dates specified in Contract Documents.

B. Overall time of completion and time of completion for each milestone shown on Progress Schedule shall adhere to times in the Contract, unless an earlier (advanced) time of completion is requested by Contractor and agreed to by District. Any such agreement shall be formalized by a Change Order.

(1) District is not required to accept an early completion schedule, i.e., one that shows an earlier completion date than the Contract Time.

(2) Contractor shall not be entitled to extra compensation in event agreement is reached on an earlier completion schedule and Contractor completes its Work, for whatever reason, beyond completion date shown in its early completion schedule but within the Contract Time.

(3) A schedule showing the work completed in less than the Contract Time, and that has been accepted by District, shall be considered to have Project Float. The Project Float is the time between the scheduled completion of the work and the Completion Date. Project Float is a resource available to both District and the Contractor.

C. Ownership Project Float: Neither the District nor Contractor owns Project Float. The Project owns the Project Float. As such, liability for delay of the Completion

Date rests with the party whose actions, last in time, actually cause delay to the Completion Date.

(1) For example, if Party A uses some, but not all of the Project Float and Party B later uses remainder of the Project Float as well as additional time beyond the Project Float, Party B shall be liable for the time that represents a delay to the Completion Date.

(2) Party A would not be responsible for the time since it did not consume the entire Project Float and additional Project Float remained; therefore, the Completion Date was unaffected by Party A.

D. Progress Schedule shall be the basis for evaluating job progress, payment requests, and time extension requests. Responsibility for developing Contract CPM Schedule and monitoring actual progress as compared to Progress Schedule rests with Contractor.

E. Failure of Progress Schedule to include any element of the Work, or any inaccuracy in Progress Schedule, will not relieve Contractor from responsibility for accomplishing the Work in accordance with the Contract. District's acceptance of schedule shall be for its use in monitoring and evaluating job progress, payment requests, and time extension requests and shall not, in any manner, impose a duty of care upon District, or act to relieve Contractor of its responsibility for means and methods of construction.

F. Software: Use **[i.e., District Project Planner for Windows, latest version].** Such software shall be compatible with Windows operating system. Contractor shall transmit contract file to District on compact disk at times requested by District.

G. Transmit each item under the form approved by District.

(1) Identify Project with District Contract number and name of Contractor.

(2) Provide space for Contractor's approval stamp and District's review stamps.

(3) Submittals received from sources other than Contractor will be returned to the Contractor without District's review.

1.06 INITIAL CPM SCHEDULE

A Initial CPM Schedule submitted for review at the pre-construction conference shall serve as Contractor's schedule for up to ninety (90) calendar days after the Notice to Proceed.

B. Indicate detailed plan for the Work to be completed in first ninety (90) days of the Contract; details of planned mobilization of plant and equipment; sequence of early operations; procurement of materials and equipment. Show Work beyond ninety (90) calendar days in summary form.

C. Initial CPM Schedule shall be time-scaled.

D. Initial CPM Schedule shall be cost and resource loaded. Accepted cost and resource loaded schedule will be used as basis for monthly progress payments until acceptance of the Original CPM Schedule. Use of Initial CPM Schedule for progress payments shall not exceed ninety (90) calendar days.

E. District and Contractor shall meet to review and discuss the Initial CPM Schedule within seven (7) calendar days after it has been submitted to District.

  (1) District's review and comment on the schedule shall be limited to Contract conformance (with sequencing, coordination, and milestone requirements).

  (2) Contractor shall make corrections to schedule necessary to comply with Contract requirements and shall adjust schedule to incorporate any missing information requested by District. Contractor shall resubmit Initial CPM Schedule if requested by District.

F. If, during the first ninety (90) days after Notice to Proceed, the Contractor is of the opinion that any of the Work included on its Initial CPM Schedule has been impacted, the Contractor shall submit to District a written Time Impact Evaluation ("TIE") in accordance with Article 1.12 of this Section. The TIE shall be based on the most current update of the Initial CPM Schedule.

1.07 ORIGINAL CPM SCHEDULE

A. Submit a detailed proposed Original CPM Schedule presenting an orderly and realistic plan for completion of the Work in conformance with requirements as specified herein.

B. Progress Schedule shall include or comply with following requirements:

  (1) Time scaled, cost and resource (labor and major equipment) loaded CPM schedule.

  (2) No activity on schedule shall have duration longer than fifteen (15) work days, with exception of submittal, approval, fabrication and procurement activities, unless otherwise approved by District.

    (a) Activity durations shall be total number of actual work days required to perform that activity.

  (3) The start and completion dates of all items of Work, their major components, and milestone completion dates, if any.

  (4) District -furnished materials and equipment, if any, identified as separate activities.

  (5) Activities for maintaining Project Record Documents.

(6) Dependencies (or relationships) between activities.

(7) Processing/approval of submittals and shop drawings for all material and equipment required per the Contract. Activities that are dependent on submittal acceptance or material delivery shall not be scheduled to start earlier than expected acceptance or delivery dates.

  (a) Include time for submittals, re-submittals and reviews by District. Coordinate with accepted schedule for submission of Shop Drawings, samples, and other submittals.

  (b) Contractor shall be responsible for all impacts resulting from re-submittal of Shop Drawings and submittals.

(8) Procurement of major equipment, through receipt and inspection at jobsite, identified as separate activity.

  (a) Include time for fabrication and delivery of manufactured products for the Work.

  (b) Show dependencies between procurement and construction.

(9) Activity description; what Work is to be accomplished and where.

(10) The total cost of performing each activity shall be total of labor, material, and equipment, excluding overhead and profit of Contractor. Overhead and profit of the General Contractor shall be shown as a separate activity in the schedule. Sum of cost for all activities shall equal total Contract value.

(11) Resources required (labor and major equipment) to perform each activity.

(12) Responsibility code for each activity corresponding to Contractor or Subcontractor responsible for performing the Work.

(13) Identify the activities which constitute the controlling operations or critical path. No more than twenty-five (25%) of the activities shall be critical or near critical. Near critical is defined as float in the range of one (1) to (10) days.

(14) Twenty (20) workdays for developing punch list(s), completion of punch-list items, and final clean up for the Work or any designated portion thereof. No other activities shall be scheduled during this period.

(15) Interface with the work of other contractors, District, and agencies such as, but not limited to, utility companies.

(16) Show detailed Subcontractor Work activities. In addition, furnish copies of Subcontractor schedules upon which CPM was built.

(a) Also furnish for each Subcontractor, as determined by District, submitted on Subcontractor letterhead, a statement certifying that Subcontractor concurs with Contractor's Original CPM Schedule and that Subcontractor's related schedules have been incorporated, including activity duration, cost and resource loading.

(b) Subcontractor schedules shall be independently derived and not a copy of Contractor's schedule.

(c) In addition to Contractor's schedule and resource loading, obtain from electrical, mechanical, and plumbing Subcontractors, and other Subcontractors as required by District, productivity calculations common to their trades, such as units per person day, feet of pipe per day per person, feet of wiring per day per person, and similar information.

(d) Furnish schedule for Contractor/Subcontractor CPM schedule meetings which shall be held prior to submission of Original CPM schedule to District. District shall be permitted to attend scheduled meetings as an observer.

(17) Activity durations shall be in Work days.

(18) Submit with the schedule a list of anticipated non-Work days, such as weekends and holidays. The Progress Schedule shall exclude in its Work day calendar all non-Work days on which Contractor anticipates critical Work will not be performed.

C. Original CPM Schedule Review Meeting: Contractor shall, within sixty (60) days from the Notice to Proceed date, meet with District to review the Original CPM Schedule submittal.

(1) Contractor shall have its Project Manager, Project Superintendent, Project Scheduler, and key Subcontractor representatives, as required by District, in attendance. The meeting will take place over a continuous one (1) day period.

(2) District's review will be limited to submittal's conformance to Contract requirements including, but not limited to, coordination requirements. However, review may also include:

(a) Clarifications of Contract Requirements.

(b) Directions to include activities and information missing from submittal.

(c) Requests to Contractor to clarify its schedule.

(3) Within five (5) days of the Schedule Review Meeting, Contractor shall respond in writing to all questions and comments expressed by District at the Meeting.

1.08 ADJUSTMENTS TO CPM SCHEDULE

A. Adjustments to Original CPM Schedule: Contractor shall have adjusted the Original CPM Schedule submittal to address all review comments from original CPM Schedule review meeting and resubmit network diagrams and reports for District's review.

(1) District, within ten (10) days from date that Contractor submitted the revised schedule, will either:

(a) Accept schedule and cost and resource loaded activities as submitted, or

(b) Advise Contractor in writing to review any part or parts of schedule which either do not meet Contract requirements or are unsatisfactory for District to monitor Project's progress, resources, and status or evaluate monthly payment request by Contractor.

(2) District may accept schedule with conditions that the first monthly CPM Schedule update be revised to correct deficiencies identified.

(3) When schedule is accepted, it shall be considered the "Original CPM Schedule" which will then be immediately updated to reflect the current status of the work.

(4) District reserves right to require Contractor to adjust, add to, or clarify any portion of schedule which may later be discovered to be insufficient for monitoring of Work or approval of partial payment requests. No additional compensation will be provided for such adjustments, additions, or clarifications.

B. Acceptance of Contractor's schedule by District will be based solely upon schedule's compliance with Contract requirements.

(1) By way of Contractor assigning activity durations and proposing sequence of Work, Contractor agrees to utilize sufficient and necessary management and other resources to perform work in accordance with the schedule.

(2) Upon submittal of schedule update, updated schedule shall be considered "current" CPM Schedule.

(3) Submission of Contractor's schedule to District shall not relieve Contractor of total responsibility for scheduling, sequencing, and pursuing Work to comply with requirements of Contract Documents, including adverse effects such as delays resulting from ill-timed Work.

C. Submittal of Original CPM Schedule, and subsequent schedule updates, shall be understood to be Contractor's representation that the Schedule meets requirements of Contract Documents and that Work shall be executed in sequence indicated on the schedule.

D. Contractor shall distribute Original CPM Schedule to Subcontractors for review and written acceptance, which shall be noted on Subcontractors' letterheads to Contractor and transmitted to District for the record.

1.09 MONTHLY CPM SCHEDULE UPDATE SUBMITTALS

A. Following acceptance of Contractor's Original CPM Schedule, Contractor shall monitor progress of Work and adjust schedule each month to reflect actual progress and any anticipated changes to planned activities.

   (1) Each schedule update submitted shall be complete, including all information requested for the Original CPM Schedule submittal.

   (2) Each update shall continue to show all Work activities including those already completed. These completed activities shall accurately reflect "as built" information by indicating when activities were actually started and completed.

B. A meeting will be held on approximately the twenty-fifth (25th) of each month to review the schedule update submittal and progress payment application.

   (1) At this meeting, at a minimum, the following items will be reviewed: Percent (%) complete of each activity; Time Impact Evaluations for Change Orders and Time Extension Request; actual and anticipated activity sequence changes; actual and anticipated duration changes; and actual and anticipated Contractor delays.

   (2) These meetings are considered a critical component of overall monthly schedule update submittal and Contractor shall have appropriate personnel attend. At a minimum, these meetings shall be attended by Contractor's General Superintendent and Scheduler.

   (3) Contractor shall plan on the meeting taking no less than four (4) hours.

C. Within five (5) working days after monthly schedule update meeting, Contractor shall submit the updated CPM Schedule update.

D. Within five (5) work days of receipt of above noted revised submittals, District will either accept or reject monthly schedule update submittal.

   (1) If accepted, percent (%) complete shown in monthly update will be basis for Application for Payment by the Contractor. The schedule update shall be submitted as part of the Contractor's Application for Payment.

   (2) If rejected, update shall be corrected and resubmitted by Contractor before the Application for Payment is submitted.

E. Neither updating, changing or revising of any report, curve, schedule, or narrative submitted to District by Contractor under this Contract, nor District's review or acceptance of any such report, curve, schedule or narrative shall have the effect of amending or modifying in any way the Completion Date or milestone dates or of modifying or limiting in any way Contractor's obligations under this Contract.

1.10 SCHEDULE REVISIONS

A. Updating the Schedule to reflect actual progress shall not be considered revisions to the Schedule. Since scheduling is a dynamic process, revisions to activity durations and sequences are expected on a monthly basis.

B. To reflect revisions to the schedule, the Contractor shall provide District with a written narrative with a full description and reasons for each Work activity revised. For revisions affecting the sequence of work, the Contractor shall provide a schedule diagram which compares the original sequence to the revised sequence of work. The Contractor shall provide the written narrative and schedule diagram for revisions two (2) working days in advance of the monthly schedule update meeting.

C. Schedule revisions shall not be incorporated into any schedule update until the revisions have been reviewed by District. District may request further information and justification for schedule revisions and Contractor shall, within three (3) days, provide District with a complete written narrative response to District's request.

D. If the Contractor's revision is still not accepted by District, and the Contractor disagrees with District's position, the Contractor has seven (7) calendar days from receipt of District's letter rejecting the revision to provide a written narrative providing full justification and explanation for the revision. The Contractor's failure to respond in writing within seven (7) calendar days of District's written rejection of a schedule revision shall be contractually interpreted as acceptance of District's position, and the Contractor waives its rights to subsequently dispute or file a claim regarding District's position.

E. At District's discretion, the Contractor can be required to provide Subcontractor certifications of performance regarding proposed schedule revisions affecting said Subcontractors.

1.11 RECOVERY SCHEDULE

A. If the Schedule Update shows a completion date twenty-one (21) calendar days beyond the Contract Completion Date, or individual milestone completion dates, the Contractor shall submit to District the proposed revisions to recover the lost time within seven (7) calendar days. As part of this submittal, the Contractor shall provide a written narrative for each revision made to recapture the lost time. If the revisions include sequence changes, the Contractor shall provide a schedule diagram comparing the original sequence to the revised sequence of work.

B. The revisions shall not be incorporated into any schedule update until the revisions have been reviewed by District.

C. If the Contractor's revisions are not accepted by District, District and the Contractor shall follow the procedures in paragraph 1.09.C, 1.09.D and 1.09.E above.

D. At District's discretion, the Contractor can be required to provide Subcontractor certifications for revisions affecting said Subcontractors.

1.12 TIME 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 the requirements of Contract Documents.

F. Failure of the Contractor to perform in accordance with the current schedule update shall not be excused by submittal of time extension requests.

G. If the Contractor does not submit a TIE within the required fourteen (14) calendar days for any issue, it is mutually agreed that the Contractor does not require a time extension for said issue.

1.14 SCHEDULE REPORTS

A. Submit four (4) copies of the following reports with the Initial CPM Schedule, the Original CPM Schedule, and each monthly update.

B. Required Reports:

(1) Two activity listing reports: one sorted by activity number and one by total Project Float. These reports shall also include each activity's early/late and actual start and finish dates, original and remaining duration, Project Float, responsibility code, and the logic relationship of activities.

(2) Cost report sorted by activity number including each activity's associated cost, percentage of Work accomplished, earned value- to-date, previous payments, and amount earned for current update period.

(3) Schedule plots presenting time-scaled network diagram showing activities and their relationships with the controlling operations or critical path clearly highlighted.

(4) Cash flow report calculated by early start, late start, and indicating actual progress. Provide an exhibit depicting this information in graphic form.

(5) Planned versus actual resource (i.e., labor) histogram calculated by early start and late start.

C. Other Reports

In addition to above reports, District may request, from month-to-month, any two of the following reports. Submit four (4) copies of all reports.

(1) Activities by early start.

(2) Activities by late start.

(3) Activities grouped by Subcontractors or selected trades.

(4) Activities with scheduled early start dates in a given time frame, such as fifteen (15) or thirty (30) day outlook.

D. Furnish District with report files on compact disks containing all schedule files for each report generated.

1.15 PROJECT STATUS REPORTING

A. In addition to submittal requirements for CPM scheduling identified in this Section, Contractor shall provide a monthly project status report (i.e., written narrative report) to be submitted in conjunction with each CPM Schedule as specified herein. Status reporting shall be in form specified below.

B. Contractor shall prepare monthly written narrative reports of status of Project for submission to District. Written status reports shall include:

(1) Status of major Project components (percent (%) complete, amount of time ahead or behind schedule) and an explanation of how Project will be brought back on schedule if delays have occurred.

(2) Progress made on critical activities indicated on CPM Schedule.

(3) Explanations for any lack of work on critical path activities planned to be performed during last month.

(4) Explanations for any schedule changes, including changes to logic or to activity durations.

(5) List of critical activities scheduled to be performed next month.

(6) Status of major material and equipment procurement.

(7) Any delays encountered during reporting period.

(8) Contractor shall provide printed report indicating actual versus planned resource loading for each trade and each activity. This report shall be provided on weekly and monthly basis.

(a) Actual resource shall be accumulated in field by Contractor, and shall be as noted on Contractor’s daily reports. These reports will be basis for information provided in computer-generated monthly and weekly printed reports.

(b) Contractor shall explain all variances and mitigation measures.

(9) Contractor may include any other information pertinent to status of Project. Contractor shall include additional status information requested by District at no additional cost.

(10) Status reports, and the information contained therein, shall not be construed as claims, notice of claims, notice of delay, or requests for changes or compensation.

1.16 WEEKLY SCHEDULE REPORT

At the Weekly Progress Meeting, the Contractor shall provide and present a time-scaled three (3) week look-ahead schedule that is based and correlated by activity number to the current schedule (i.e., Initial, Original CPM, or Schedule Update).

1.17 DAILY CONSTRUCTION REPORTS

On a daily basis, Contractor shall submit a daily activity report to District for each workday, including weekends and holidays when worked. Contractor shall develop the daily construction reports on a computer-generated database capable of sorting daily Work, manpower, and 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

SECTION 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 PDF document. The District will review and return one reproducible PDF document to Contractor.

B. Before commencing installation of any Work, the Contractor shall submit and receive approval of all drawings, descriptive data, and material list(s) as required to accomplish Work.

C. Review of Shop Drawings is regarded as a service to assist Contractor and in all cases original Contract Documents shall take precedence as outlined under General Conditions.

D. No claim for extra time or payment shall be based on work shown on Shop Drawings unless the claim is (1) noted on Contractor's transmittal letter accompanying Shop Drawings and (2) Contractor has complied with all applicable provisions of the General Conditions, including, without limitation, provisions regarding changes and payment, and all required written approvals.

E. District shall not review Shop Drawings for quantities of materials or number of items supplied.

F. District's and/or Architect's review of Shop Drawing will be general. District and/or Architect review does not relieve Contractor of responsibility for dimensions, accuracy, proper fitting, construction of Work, furnishing of materials, or Work required by Contract Documents and not indicated on Shop Drawings. 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) Specification number and description.

(3) Architect's name and project number.

(4) Shop Drawing title, number, date, and scale.

(5) Names of Contractor, Subcontractor(s) and fabricator.

(6) Working and erection dimensions.

(7) Arrangements and sectional views.

(8) Necessary details, including complete information for making connections with other Work.

(9) Kinds of materials and finishes.

(10) Descriptive names of materials and equipment, classified item numbers, and locations at which materials or equipment are to be installed in the Work. Contractor shall use same reference identification(s) as shown on Contract Drawings.

M. Contractor shall prepare composite drawings and installation layouts when required to solve tight field conditions.

(1) Shop Drawings shall consist of dimensioned plans and elevations and must give complete information, particularly as to size and location of sleeves, inserts, attachments, openings, conduits, ducts, boxes, structural interferences, etc.

(2) Contractor shall coordinate these composite Shop Drawings and installation layouts in the field between itself and its Subcontractor(s) for proper relationship to the Work, the work of other trades, and the field conditions. The Contractor shall check and approve all submittal(s) before submitting them for final review.

1.4 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. Contract must submit a minimum of six (6) each, to the District. District shall return one (1) to the Contractor, who shall reproduce whatever additional copies it requires for distribution.

B. Contractor shall submit one reproducible PDF document of a complete list of all major items of mechanical, plumbing, and electrical equipment and materials in accordance with the approved Submittal Schedule, except as required earlier to comply with the approved Construction Schedule. Other items specified are to be submitted prior to commencing Work. Contractor shall submit items of like kind at one time in a neat and orderly manner. Partial lists will not be acceptable.

C. Submittals shall include manufacturer's specifications, physical dimensions, and ratings of all equipment. Contractor shall furnish performance curves for all pumps and fans. Where printed literature describes items in addition to that item being submitted, submitted item shall be clearly marked on sheet and superfluous information shall be crossed out. If highlighting is used, Contractor shall mark all copies.

D. Equipment submittals shall be complete and include space requirements, weight, electrical and mechanical requirements, performance data, and supplemental information that may be requested.

E. Imported Materials Certification must be submitted at least ten (10) days before material is delivered.

1.5 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 two (2) 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. Such resubmittal shall not delay the Work.

E. Contractor may proceed with any of the Work covered by Sample(s), Shop Drawing(s), Product Data, and other submittal(s) upon its return if designated as no exception taken, or revise as noted, provided the Contractor proceeds in accordance with the District and/or the Architect's notes and comments.

F. Contractor shall not begin any of the work covered by a Sample(s), Shop Drawing(s), Product Data, and other submittal(s), designated as revise and resubmit or rejected, until a revision or correction thereof has been reviewed and returned to Contractor.

G. Sample(s), Shop Drawing(s), Product Data, and other submittal(s) designated as revise and resubmit or rejected and requiring resubmittal, shall be revised or corrected and resubmitted to the District no later than fourteen (14) days or a shorter period as required to comply with the approved Construction Schedule, after its return to Contractor.

H. Neither the review nor the lack of review of any Sample(s), Shop Drawing(s), Product Data, and other submittal(s) shall waive any of the requirements of the Contract Documents, or relieve Contractor of any obligation thereunder.

I. District's and/or Architect's review of Shop Drawings does not relieve the Contractor of responsibility for any errors that may exist. Contractor is responsible for the dimensions and design of adequate connections and details and for satisfactory construction of all the Work.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF SECTION

DOCUMENT 01 35 13.23

SITE STANDARDS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions, including without limitation, Site Access, Conditions, and Regulations;

B. Special Conditions;

C. Drug-Free Workplace Certification;

D. Tobacco-Free Environment Certification;

E. Criminal Background Investigation/Fingerprinting Certification;

F. Temporary Facilities and Controls.

1.02 REQUIREMENTS OF THE DISTRICT:

A. Drug-Free Schools and Safety Requirements:

(1) All school sites and other District Facilities have been declared "Drug-Free Zones." No drugs, alcohol and/or smoking are allowed at any time in any buildings and/or grounds on District property. No students, staff, visitors, or contractors are to use drugs on these sites.

(2) Smoking and the use of tobacco products by all persons is prohibited on or in District property. District property includes school buildings, school grounds, school owned vehicles and vehicles owned by others while on District property. Contractor shall post: "Non-Smoking Area" in a highly visible location 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 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 Site. If Contractor requests, District determines it is required, and to the extent possible, District shall designate a staging area so as not to interfere with the normal functioning of school facilities. Location of gates and fencing shall be approved in advance with District and at Contractor's expense.

(4) Parking areas shall be reviewed and approved by District in advance. No parking is to occur under the drip line of trees or in areas that could otherwise be damaged.

E. All of the above shall be observed and complied with by the Contractor and all workers on the Site. Failure to follow these directives could result in individual(s) being suspended or removed from the work force at the discretion of the District. The same rules and regulations shall apply equally to delivery personnel, inspectors, consultants, and other visitors to the Site.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

DOCUMENT 01 41 00

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions, including, without limitation, Obtaining of Permits and Licenses and Work to Comply with All Applicable Regulations;

B. Special Conditions; and

C. Quality Control.

1.02 DESCRIPTION:

This section covers the general requirements for regulatory requirements pertaining to the Work and is supplementary to all other regulatory requirements mentioned or referenced elsewhere in the Contract Documents.

1.03 REQUIREMENTS OF REGULATORY AGENCIES:

A. All statutes, ordinances, laws, rules, codes, regulations, standards, and the lawful orders of all public authorities having jurisdiction 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-Structural Safety (DSA/SS), Chapter 4, Part 1, Title 24, CCR, and the most current version on the date the bids are opened and as it pertains to school construction including, without limitation:

(1) Test and testing laboratory per Section 4-335 (District shall pay for the testing laboratory.)

(2) Special inspections per Section 4-333(c).

(3) Verified reports per Section 4-365 & 4-343(c).

(4) Duties of the Architect & Engineers shall be per Section 4-333(a) and 4-341.

(5) Duties of the Contractor shall be per Section 4-343.

(6) Addenda and Change Orders per Section 4-338.

Contractor shall keep and make available a copy of Part 1 and 2 of the most current version of Title 24 at the Site during construction.

C. Items of deferred approval shall be clearly marked on the first sheet of the Architect’s and/or Engineer's approved Drawings. All items later submitted for approval shall be per Title 24 requirements to the DSA.

(1) Building Standards Administrative Code, Part 1, Title 24, CCR

(2) California Building Code (CBC), Part 2, Title 24, CCR; (Uniform Building code volumes 1-3 and California Amendments).

(3) California Electrical Code (CEC), Part 3, Title 24, CCR; (National Electrical Code and California Amendments).

(4) California Mechanical Code (CMC), Part 4, Title 24, CCR; (Uniform Mechanical Code and California Amendments).

(5) California Plumbing Code (CPC), Part 5, Title 24, CCR; (Uniform Plumbing Code and California Amendments).

(6) California Fire Code (CFC), Part 9, Title 24, CCR; (Fire Plumbing Code and California Amendments).

(7) California Referenced Standards Code, Part 12, Title 24, CCR.

(8) State Fire Marshal Regulations, Public Safety, Title 19, CCR.

(9) Partial List of Applicable NFPA Standards:

  (a) NFPA 13 - Automatic Sprinkler System.

  (b) NFPA 14 - Standpipes Systems.

  (c) NFPA 17A - Wet Chemical System

  (d) NFPA 24 - Private Fire Mains.

  (e) (California Amended) NFPA 72 - National Fire Alarm Codes.

  (f) NFPA 253 - Critical Radiant Flux of Floor Covering System.

  (g) NFPA 2001 - Clean Agent Fire Extinguishing Systems.

(10) California Division of the State Architect interpretation of Regulations.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

DOCUMENT 01 42 13

ABBREVIATIONS AND ACRONYMS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions including without limitation, Definitions;

B. Special Conditions.

1.02 DOCUMENT INCLUDES:

A. Abbreviations used throughout the Contract Documents.

B. Reference to a technical society, organization, or body is by abbreviation, as follows:

1.	AA	Aluminum Association
2.	AAMA	Architectural Aluminum Manufacturers Association
3.	AASHTO	American Association of State Highway and Transportation Officials
4.	ABPA	Acoustical and Board Products Association
5.	ACI	American Concrete Institute
6.	AGA	American Gas Association
7.	AGC	Associated General Contractors
8.	AHC	Architectural Hardware Consultant
9.	AI	Asphalt Institute
10.	AIA	American Institute of Architects
11.	AIEE	American Institute of Electrical Engineers
12.	AISC	American Institute of Steel Construction
13.	AISI	American Iron and Steel Institute
14.	AMCA	Air Moving and Conditioning Association
15.	ANSI	American National Standards Institute
16.	APA	American Plywood Association
17.	ARI	Air Conditioning and Refrigeration Institute
18.	ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
19.	ASME	American Society of Mechanical Engineers
20.	ASSE	American Society of Structural Engineers
21.	ASTM	American Society of Testing and Materials
22.	AWPB	American Wood Preservers Bureau
23.	AWPI	American Wood preservers Institute
24.	AWS	American Welding Society
25.	AWSC	American Welding Society Code
26.	AWI	Architectural Woodwork Institute
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 16

DEFINITIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISION

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

A. General Conditions including without limitation, Definitions;

B. Special Conditions.

1.02 QUALITY ASSURANCE:

A. For products or workmanship specified by association, trade, or Federal Standards, Contractor shall comply with requirements of the standard, except when more rigid requirements are specified in the Contract Documents, or are required by applicable codes.

B. Contractor shall conform to current reference standard publication date in effect on the date of bid opening.

C. Contractor shall obtain copies of standards unless specifically required not to by the Contract Documents.

D. Contractor shall maintain a copy of all standards at jobsite during submittals, planning, and progress of the specific Work, until final completion, unless specifically required not to by the Contract Documents.

E. Should specified reference standards conflict with Contract Documents, Contractor shall request clarification from the District and./or the Architect before proceeding.

F. The contractual relationship of the parties to the Contract shall not be altered from the contractual relationship as indicated in the Contract Documents by mention or inference otherwise in any referenced document.

G. Governing Codes shall be as shown in the Contract Documents including, without limitation, the Specifications.

END OF DOCUMENT

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
ACPA	American Concrete Pipe Association 8445 Freeport Parkway, Suite 350 Irving, TX 75063-2595 www.concrete-pipe.org	972/506-7216

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 www.steel.org	202/452.7100
AITC	American Institute of Timber Construction 7012 S. Revere Parkway Suite 140 Centennial, CO 80112 www.aitc-glulam.org	303/792.9559

ALI	Associated Laboratories, Inc. P.O. Box 152837 Dallas, TX 75315 www.assoc-labs.com	214/565-0593
ALSC	American Lumber Standards Committee, Inc. P.O. Box 210 Germantown, MD 20875 www.alsc.org	301/972-1700
AMCA	Air Movement and Control Association International, Inc. 30 W. University Drive Arlington Heights, IL 60004 www.amca.org	847/394-0150
ANLA	American Nursery & Landscape Association 1200 G Street NW, Suite 800 Washington, DC 20005 www.anla.org	202/789-2900
ANSI	American National Standards Institute 1899 L Street, NW, 11th Floor Washington, DC, 20036 www.ansi.org	202/293.8020
APA	APA-The Engineered Wood Association 7011 S. 19th Street Tacoma, WA 98466-5333 www.apawood.org	253/565-6600
APA	Architectural Precast Association 6710 Winkler Road, Suite 8 Fort Myers, Florida 33919 www.archprecast.org	239/454-6989
ARI	Air Conditioning and Refrigeration Institute 4100 N. Fairfax Drive, Suite 200 Arlington, VA 22203 www.lightindustries.com/ARI	703/524-8800
ARMA	Asphalt Roofing Manufacturers Association Public Information Department 750 National Press Building 529 14th Street, NW Washington, DC 20045 www.asphaltroofing.org	202/591-2450
ASA	The Acoustical Society of America ASA Office Manager Suite 1NO1 2 Huntington Quadrangle Melville, NY 11747-4502 http://asa.aip.org	516/576-2360

ASCE	American Society of Civil Engineers 1801 Alexander Bell Drive Reston, VA 20191 www.asce.org	800/548-2723 703/295-6300
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers 1791 Tullie Circle, NE Atlanta, GA 30329-2305 www.ashrae.org	800/527-4723 404/636-8400
ASLA	American Society of Landscape Architects 636 Eye Street, NW Washington, DC 20001-3736 www.asla.org	202/898-2444
ASME	American Society of Mechanical Engineers Three Park Avenue New York, NY 10016-5990 www.asme.org	800/434-2763
ASPE	American Society of Plumbing Engineers 2980 S River Rd. Des Plaines, IL 60018 http://aspe.org	847/296-0002
ASQ	American Society for Quality P.O. Box 3005 Milwaukee, WI 53201-3005 or 600 North Plankinton Avenue Milwaukee, WI 53203 http://asq.org	800/248-1946 414/272-8575
ASSE	American Society of Sanitary Engineering 901 Canterbury, Suite A Westlake, Ohio 44145 www.asse-plumbing.org	440/835-3040
ASTM	ASTM International 100 Barr Harbor Drive PO Box C700 West Conshohocken, PA, 19428-2959 www.astm.org	610/832-9500
AWCI	Association of the Wall and Ceiling Industry 513 West Broad Street, Suite 210 Falls Church, VA 22046 www.awci.org	703/538-1600
AWPA	American Wood Protection Association P.O. Box 361784 Birmingham, AL 35236-1784 www.awpa.com	205/733-4077

AWPI	American Wood Preservers Institute 2750 Prosperity Ave. Suite 550 Fairfax, VA 22031-4312 www.arcat.com	800/356-AWPI 703/204-0500
AWS	American Welding Society 8669 Doral Boulevard, Suite 130 Doral, Florida 33166 www.aws.org	800/443-9353 305/443-9353
AWI	Architectural Woodwork Institute 46179 Westlake Drive, Suite 120 Potomac Falls, VA 20165-5874 www.awinet.org	571/323-3636
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235 www.awwa.org	800/926-7337 303/794 7711
BHMA	Builders Hardware Manufacturers Association 355 Lexington Avenue, 15th floor New York, NY 10017 www.buildershardware.com	212/297-2122
BIA	The Brick Industry Association 1850 Centennial Park Drive, Suite 301 Reston, VA 20191 www.gobrick.com	703/620-0010
CGA	Compressed Gas Association 14501 George Carter Way, Suite 103 Chantilly VA 20151-2923 www.cganet.com	703/788-2700
CISCA	Ceilings & Interior Systems Construction Association 1010 Jorie Blvd, Suite 30 Oak Brook, IL 60523 www.cisca.org	630/584-1919
CISPI	Cast Iron Soil Pipe Institute 1064 Delaware Avenue SE Atlanta, GA 30316 www.cispi.org	404/622-0073
CLFMI	Chain Link Fence Manufacturers Institute 10015 Old Columbia Road, Suite B-215 Columbia, MD 21046 www.associationsites.com/main-pub.cfm?usr=clfma	410/290-6267
CPA	Composite Panel Association 19465 Deerfield Avenue, Suite 306 Leesburg, VA 20176 www.compositepanel.org	703/724-1128

CPSC	Consumer Product Safety Commission 4330 East West Highway Bethesda, MD 20814 www.cpsc.gov	301/504-7923 800/638-2772
CRA	California Redwood Association 405 Enfrente Drive, Suite 200 Novato, CA 94949 www.calredwood.org	415/382-0662
CRI	Carpet and Rug Institute P.O. Box 2048 Dalton, Georgia 30722-2048 www.carpet-rug.org	706/278-3176
CRSI	Concrete Reinforcing Steel Institute 933 N. Plum Grove Road Schaumburg, IL 60173 4758 www.crsi.org	847/517-1200
CSI	The Construction Specifications Institute 110 South Union Street, Suite 100 Alexandria VA 22314 www.csinet.org	800/689-2900
CTIOA	Ceramic Tile Institute of America 12061 Jefferson Blvd. Culver City, CA 90230-6219 www.ctioa.org	310/574-7800
DHI	Door and Hardware Institute (formerly National Builders Hardware Association) 14150 Newbrook Dr. Chantilly, VA 20151 www.dhi.org	703/222-2010
DIPRA	Ductile Iron Pipe Research Association 2000 2nd Avenue, South Suite 429 Birmingham, AL 35233 www.dipra.org	205/402-8700
DOC	U.S. Department of Commerce 1401 Constitution Ave., NW Washington, D.C. 20230 www.commerce.gov	202/482-2000
DOT	U.S. Department of Transportation 1200 New Jersey Avenue, SE Washington, DC 20590 www.dot.gov	855/368-4200
EJMA	Expansion Joint Manufacturers Association, Inc. 25 North Broadway Tarrytown, NY 10591 www.ejma.org	914/332-0040

EPA	Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N.W. Washington, DC 20460 www.epa.gov	202/272-0167
FCICA	Floor Covering Installation Contractors Association 7439 Millwood Drive West Bloomfield, MI 48322 www.fcica.com	248/661-5015 877/TO-FCICA
FM Global	Factory Mutual Insurance Company Mary Breighner Global Practice Leader Education, Public Entities, Health Care FM Global 9 Woodcrest Court Cincinnati, OH 45246 www.fmglobal.com	513/742-9516
FS	General Services Administration (GSA) Index of Federal Specifications, Standards and Commercial Item Descriptions 470 East L'Enfant Plaza, SW, Suite 8100 Washington, DC 20407 www.gsa.gov	202/619-8925
GA	The Gypsum Association 6525 Belcrest Road, Suite 480 Hyattsville, MD 20782 www.gypsum.org	301/277-8686
GANA	Glass Association of North America 800 SW Jackson St., Suite 1500 Topeka, KS 66612-1200 www.glasswebsite.com	785/271-0208
HMA	Hardwood Manufacturers Association 665 Rodi Road, Suite 305 Pittsburgh, PA 15235 http://hmamembers.org	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 http://mss-hq.org	703/281-6613
NAAMM	National Association of Architectural Metal Manufacturers 800 Roosevelt Rd. Bldg. C, Suite 312 Glen Ellyn, IL 60137 www.naamm.org	630/942-6591

NAIMA	North American Insulation Manufacturers Association 44 Canal Center Plaza, Suite 310 Alexandria, VA 22314 www.naima.org	703/684-0084
NAPA	National Asphalt Pavement Association 5100 Forbes Blvd. Lanham, MD USA 20706-4407 www.asphaltpavement.org	888/468-6499 301/731-4748
NCSPA	National Corrugated Steel Pipe Association 14070 Proton Road, Suite 100 LB9 Dallas, TX 75244 www.ncspa.org	972/850-1907
NCMA	National Concrete Masonry Association 13750 Sunrise Valley Drive Herndon, VA 20171-4662 www.ncma.org	703/713-1900
NEBB	National Environmental Balancing Bureau 8575 Grovemont Circle Gaithersburg, MD 20877 www.nebb.org	301/977-3698
NECA	National Electrical Contractors Association 3 Bethesda Metro Center, Suite 1100 Bethesda, MD 20814 www.necanet.org	301/657-3110
	National Electrical Manufacturers Association 1300 North 17th Street, Suite 1752 Rosslyn, Virginia 22209 www.nema.org	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. 7th Floor Washington, D.C. 20001 www.cement.org	847/966-6200 202/408-9494
PCI	Precast/Prestressed Concrete Institute 200 W. Adams St. #2100 Chicago, IL 60606 www.pci.org	312/786-0300
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 www.stuccomfgassoc.com	949/387.7611
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.turfgrasssod.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 www.uni-bell.org	972/243-3902
USDA	U.S. Department of Agriculture 1400 Independence Ave., S.W. Washington, DC 20250 www.usda.gov	202/720-2791
WA	Wallcoverings Association 401 North Michigan Avenue Suite 2200 Chicago, IL 60611 www.wallcoverings.org	312/321-5166

WCLIB	West Coast Lumber Inspection Bureau P.O. Box 23145 Portland, OR 97281 or 6980 S.W. Varns Tigard, OR 97223 www.wclib.org	503/639-0651
WCMA	Window Covering Manufacturers Association 355 Lexington Avenue 15th Floor New York, New York 10017 www.wcmanet.org	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 www.wdma.com	312/321-6802 202/367-1157
WI	Woodwork Institute P.O. Box 980247 West Sacramento, CA 95798 www.wicnet.org	916/372-9943
WRI	Wire Reinforcement Institute 942 Main Street Hartford, CT 06103 www.wirereinforcementinstitute.org	860/240-9545
WWCA	Western Wall & Ceiling Contractors Association 1910 N. Lime St. Orange, California 92865 www.wwcca.org	714/221-5520
WWPA	Western Wood Products Association 522 SW Fifth Ave., Suite 500 Portland, OR 97204-2122 www2.wwpa.org	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

1.01 RELATED DOCUMENTS AND PROVISIONS

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

A. General Conditions, including, without limitation, Purchase of Materials and Equipment;

B. Special Conditions;

C. Imported Materials Certification.

1.02 MATERIAL AND EQUIPMENT

A. Only items approved by the District and/or Architect shall be used.

B. Contractor shall submit lists of products and other product information in accordance with the Contract Documents, including, without limitation, the provisions regarding the submittals.

1.03 MATERIAL AND EQUIPMENT COLORS

A. The District and/or Architect will provide a schedule of colors.

B. No individual color selections will be made until after approval of all pertinent materials and equipment and after receipt of appropriate samples in accordance with the Contract Documents, including, without limitation, the provisions regarding the submittals.

C. Contractor shall request priority in writing for any item requiring advance ordering to maintain the approved Construction Schedule.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Contractor shall deliver manufactured materials in original packages, containers, or bundles (with seals unbroken), bearing name or identification mark of manufacturer.

B. Contractor shall deliver fabrications in as large assemblies as practicable; where specified as shop-primed or shop-finished, package or crate as required to preserve such priming or finish intact and free from abrasion.

C. Contractor shall store materials in such a manner as necessary to properly protect them from damage. Materials or equipment damaged by handling, weather, dirt, or from any other cause will not be accepted.

D. Materials are not acceptable that have been warehoused for long periods of time, stored or transported in improper environment, improperly packaged, inadequately labeled, poorly protected, excessively shipped, deviated from normal distribution pattern, or reassembled.

E. Contractor shall store material so as to cause no obstructions of sidewalks, roadways, and underground services. Contractor shall protect material and equipment furnished under Contract.

F. Contractor may store materials on Site with prior written approval by the District, all material shall remain under Contractor's control and Contractor shall remain liable for any damage to the materials. Should the Project Site not have storage area available, the Contractor shall provide for off-site storage at a bonded warehouse and with appropriate insurance coverage at no cost to District.

G. When any room in Project is used as a shop or storeroom, the Contractor shall be responsible for any repairs, patching, or cleaning necessary due to that use. Location of storage space shall be subject to prior written approval by District.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers listed in various sections of Contract Documents are names of those manufacturers that are believed to be capable of supplying one or more of items specified therein.

B. The listing of a manufacturer does not imply that every product of that manufacturer is acceptable as meeting the requirements of the Contract Documents.

2.02 FACILITIES AND EQUIPMENT

Contractor shall provide, install, maintain, and operate a complete and adequate facility for handling, the execution, disposal, and distribution of material and equipment as required for proper and timely performance of Work connected with Contract.

2.03 MATERIAL REFERENCE STANDARDS

Where material is specified solely by reference to “standard specifications” and if requested by District, Contractor shall submit for review data on actual material proposed to be incorporated into Work of Contract listing name and address of vendor, manufacturer, or producer, and trade or brand names of those materials, and data substantiating compliance with standard specifications.

PART 3 - EXECUTION

3.01 WORKMANSHIP

A. Where not more specifically described in any other Contract Documents, workmanship shall conform to methods and operations of best standards and accepted practices of trade or trades involved and shall include items of fabrication, construction, or installation regularly furnished or required for completion (including finish and for successful operation, as intended).

B. Work shall be executed by tradespersons skilled in their respective lines of Work. When completed, parts shall have been durably and substantially built and present a neat appearance.

3.02 COORDINATION

A. Contractor shall coordinate installation of Work so as to not interfere with installation of others. Adjustment or rework because of Contractor’s failure to coordinate will be at no additional cost to District.

B. Contractor shall examine in-place work for readiness, completeness, fitness to be concealed or to receive other work, and in compliance with Contract Documents. Concealing or covering Work constitutes acceptance of additional cost which will result should in-place Work be found unsuitable for receiving other Work or otherwise deviating from the requirements of the Contract Documents.

3.03 COMPLETENESS

Contractor shall provide all portions of the Work, unless clearly stated otherwise, installed complete and operational with all elements, accessories, anchorages, utility connections, etc., in manner to assure well-balanced performance, in accordance with manufacturer's recommendations and by Contract Documents. For example, electric water coolers require water, electricity, and drain services; roof drains require drain system; sinks fit within countertop, etc. Terms such as “installed complete,” “operable condition,” “for use intended,” “connected to all utilities,” “terminate with proper cap,” “adequately anchored,” “patch and refinish,” “to match similar,” should be assumed to apply in all cases, except where completeness of functional or operable condition is specifically stated as not required.

3.04 APPROVED INSTALLER OR APPLICATOR

Installation by a manufacturer’s approved installer or applicator is an understood part of Specifications and only approved installer or applicator is to provide on-site Work where specified manufacturer has on-going program of approving (i.e. certifying, bonding, re-warranting) installers or applicators. Newly established relationships between a manufacturer and an installer or applicator who does not have other approved applicator work in progress or completed is not approved for this Project.

3.05 MANUFACTURER'S RECOMMENDATIONS

All installations shall be in accordance with manufacturer's published recommendations and specific written directions of manufacturer's representative. Should Contract Documents differ from recommendations of manufacturer or directions of his representative, Contractor shall analyze differences, make recommendations to the District and the Architect in writing, and shall not proceed until interpretation or clarification has been issued by the District and/or the Architect.

END OF DOCUMENT

SECTION 01 45 00

QUALITY CONTROL

PART 1 - GENERAL

1.1 OBSERVATION AND SUPERVISION

A. The Landscape Architect or his appointed representative will review the Work. Provide facilities and access to the Work at all times as required to facilitate this review.

B. 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. Contractor's superintendent shall also inspect all materials, as they arrive, for compliance with the Contract Documents. Superintendent shall reject defective work or materials immediately upon performance or delivery.

1.2 INSPECTION

A. This project is subject to inspection procedures. Inspections will be made by the District representatives. Provide facilities and access to the Work at all times as required to facilitate these inspections.

B. The District may require tests or special examination of any materials or part thereof, unidentified material, or material substituted for that previously approved to confirm compliance with Specifications; and they may reject for satisfactory replacement any material judged defective as a result thereof. Provide such tests as required.

C. The District will provide a Project Inspector.

1.3 TESTING AGENCIES

A. Testing and inspection in connection with earthwork shall be under the direction of the Project Inspector, referred to hereinafter as the "Inspector."

B. Provide testing and inspection of construction materials and workmanship by a qualified laboratory, referred to hereinafter as the "Testing Laboratory." The Testing Laboratory shall be under direction of civil engineer registered in the State of California, shall have operated successfully for four years prior to this work, shall conform to requirements of ASTM B329, and shall be acceptable to the District.

A.4 TESTS AND INSPECTIONS

A. Contractor shall furnish promptly, without additional charge, all reasonable facilities; labor and materials necessary for safe, thorough and convenient inspection; and tests that may be required by the Contract Documents. Tests and inspections shall be performed in a manner as to not delay the Work unnecessarily.

B. Contractor shall submit samples of materials for required tests or inspections.
  1. Contractor shall be solely responsible for delays due to such samples' not being submitted (and resubmitted, if necessary) in the time required to allow for tests or inspections before material is incorporated into the Work.
  2. Materials furnished shall be equal to approved test samples in every respect.

    3. Samples which are of value after testing will remain the property of the Contractor, but no such samples shall be incorporated in the Work without written approval of the Landscape Architect.

B. The owner will provide and pay for:

    1. Inspections and tests necessary to comply with laws, ordinances, rules, regulations, and orders of public authorities pursuant to General Conditions.
    2. Tests of materials and special inspections required by Specifications.

C. The Contractor is required to provide and pay for:

    1. A schedule of tests is required at least ten (10) days in advance of the first test.
    2. Give 48 hours’ notice, minimum, to Testing Agency, Project Inspector and Construction Manager for required tests and inspections.
    3. Furnish, prepare and deliver test samples and specimens as required by Testing Agency (except where such preparation and handling is to be performed by Testing Agency).
    4. Cooperate with Testing Agency personnel in providing access to materials being tested or inspected and furnishing incidental labor, equipment and facilities to facilitate inspections and tests.
    5. Coordinate the services of all testing and inspection required by the separate Specification Sections.
    6. Testing, adjusting and balancing of equipment and systems required by Specifications.
    7. Retests or re-inspections, if required, and tests or inspections required due to errors in sequencing of work or improper workmanship.
    8. Retests or re-inspections when source of material is changed after original test/inspection.
    9. Make necessary repairs to in-place work caused by removal of required test samples.

D. Provide Construction Manager and the Landscape Architect with a copy of the agency or laboratory report of each test or inspection in duplicate.

E. Additional requirements for inspections and testing are included in the General Conditions.

1.5 REQUIRED TESTS AND INSPECTIONS

A. Earthwork: Compaction tests for subgrade and aggregate base under pavements.

B. Slump Test: UBC Standard 19-7.

C. Concrete Tests: Testing agency shall test concrete used in the Work as follows:

    1. Compressive Strength:
        a. Minimum number of tests required: One (1) set of four (4) cylinders for each 50 cubic yards of concrete or major fraction thereof, place in one (1) day.

   b. One cylinder of each set shall be tested in seven (7) days and two (2) cylinders at twenty-eight (28) days. One (1) cylinder shall be held in reserve and tested only when directed by the Landscape Architect or Inspector.
   c. Concrete shall test the minimum ultimate compressive strength in 28 days, as specified. In the event that the seven (7) day tests indicate the twenty-eight (28) day test will fall below specified strength, the proportioning of concrete shall be changed by the Contractor and submitted to the Landscape Architect for review before subsequent pours.
   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 ASTM C42 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 direction of the Landscape Architect, and in a manner acceptable to the District.

D. Additional Tests and Inspections: See also various Technical Sections of the Specifications and Special Inspection requirements as shown on the Plans.

END OF SECTION

DOCUMENT 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions;

B. Special Conditions;

C. Site Standards.

1.02 TEMPORARY UTILITIES:

A. Electric Power and Lighting

(1) Contractor will pay for power during the course of the Work. To the extent power is available in the building(s) or on the Site, Contractor may use the District's existing utilities by making prearranged payments to the District for the utilities used by Contractor and all Subcontractors. Contractor shall be responsible for providing temporary facilities required to deliver that power service from its existing location in the building(s) or on the Site to point of intended use.

(2) Contractor shall verify characteristics of power available in building(s) or on the Site. Contractor shall take all actions required to make modifications where power of higher voltage or different phases of current are required. Contractor shall be fully responsible for providing that service and shall pay all costs required therefor.

(3) Contractor shall furnish, wire for, install, and maintain temporary electrical lights wherever it is necessary to provide illumination for the proper performance and/or observation of the Work: a minimum of 20 foot-candles for rough work and 50 foot-candles for finish work.

(4) Contractor shall be responsible for maintaining existing lighting levels in the project vicinity should temporary outages or service interruptions occur.

B. Heat and Ventilation

(1) Contractor shall provide temporary heat to maintain environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for the installation and curing of materials, and to protect materials and finishes from damage due to improper temperature and humidity conditions. Portable heaters shall be standard units complete with controls.

(2) Contractor shall provide forced ventilation and dehumidification, as required, of enclosed areas for proper installation and curing of materials, to disperse humidity, and to prevent hazardous accumulations of dust, fumes, vapors, and gases.

(3) Contractor shall pay the costs of installation, maintenance, operation, and removal of temporary heat and ventilation, including costs for fuel consumed, required for the performance of the Work.

C. Water

(1) Contractor will pay for water during the course of the Work. To the extent water is then available in the building(s) or on the Site, Contractor may use the District's existing utilities by making prearranged payments to the District for the utilities used by Contractor and all Subcontractors. Contractor shall be responsible for providing temporary facilities required to deliver such utility service from its existing location in the building(s) or on the Site to point of intended use.

(2) Contractor shall use backflow preventers on water lines at point of connection to District's water supply. Backflow preventers shall comply with requirements of Uniform Plumbing Code.

(3) Contractor shall make potable water available for human consumption.

D. Sanitary Facilities

(1) Contractor shall provide sanitary temporary facilities in no fewer numbers than required by law and such additional facilities as may be directed by the Inspector for the use of all workers. The facilities shall be maintained in a sanitary condition at all times and shall be left at the Site until removal is directed by the Inspector 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.

H. Temporary Facilities:

(1) **Red Hill Community Sports Park Remodel**

1.03 CONSTRUCTION AIDS:

A. Plant and Equipment:

(1) Contractor shall furnish, operate, and maintain a complete plant for fabricating, handling, conveying, installing, and erecting materials and equipment; and for conveyances for transporting workmen. Include elevators, hoists, debris chutes, and other equipment, tools, and appliances necessary for performance of the Work.

(2) Contractor shall maintain plant and equipment in safe and efficient operating condition. Damages due to defective plant and equipment, and uses made thereof, shall be repaired by Contractor at no expense to the District.

B. None of the District’s tools and equipment shall be used by Contractor for the performance of the Work.

1.04 BARRIERS AND ENCLOSURES:

A. Contractor shall obtain the District's written permission for locations and types of temporary barriers and enclosures, including fire-rated materials proposed for use, prior to their installation.

B. Contractor shall provide and maintain temporary enclosures to prevent public entry and to protect persons using other buildings and portions of the Site and/or Premises, the public, and workers. Contractor shall also protect the Work and existing facilities from the elements, and adjacent construction and improvements, persons, and trees and plants from damage and injury from demolition and construction operations.

C. Contractor shall provide site access to existing facilities for persons using other buildings and portions of the Site, the public, and for deliveries and other services and activities.

D. Tree and Plant Protection:

(1) Contractor shall preserve and protect existing trees and plants on the Premises that are not designated or required to be removed, and those adjacent to the Premises.

(2) Contractor shall provide barriers to a minimum height of 4'-0" around drip line of each tree and plant, around each group of trees and plants, as applicable, in the proximity of demolition and construction operations.

(3) Contractor shall not park trucks, store materials, perform Work or cross over landscaped areas. Contractor shall not dispose of paint thinners, water from cleaning, plastering or concrete operations, or other deleterious materials in landscaped areas, storm drain systems, or sewers. Plant materials damaged as a result of the performance of the Work shall, at the option of the District and at Contractor's expense, either be replaced with new plant materials equal in size to those damaged or by payment of an amount representing the value of the damaged materials as determined by the District.

(4) Contractor shall remove soil that has been contaminated during the performance of the Work by oil, solvents, and other materials which could be harmful to trees and plants, and replace with good soil, at Contractor's expense.

(5) Excavation Around Trees:

(a) Excavation within drip lines of trees shall be done only where absolutely necessary and with written permission from the District.

(b) Where trenching for utilities is required within drip lines, tunneling under and around roots shall be by hand digging and shall be approved by the District. Main lateral roots and taproots shall not be cut. All roots 2 inches in diameter and larger shall be tunneled under and heavily wrapped with wet burlap so as to prevent scarring or excessive drying. Smaller roots that interfere with installation of new work may be cut with prior approval by the District. Roots must first be cut with a Vermeer, or equivalent, root cutter prior to any trenching.

(c) Where excavation for new construction is required within drip line of trees, hand excavation shall be employed to minimize damage to root system. Roots shall be relocated in backfill areas wherever possible. If encountered immediately adjacent to location of new construction, roots shall be cut approximately 6 inches back from new construction.

(d) Approved excavations shall be carefully backfilled with the excavated materials approved for backfilling. Backfill shall conform to adjacent grades without dips, sunken areas, humps, or other surface irregularities. Do not use mechanical equipment to compact backfill. Tamp carefully using hand tools, refilling and tamping until Final Acceptance as necessary to offset settlement.

(e) Exposed roots shall not be allowed to dry out before permanent backfill is placed. Temporary earth cover shall be provided, or roots shall be wrapped with four layers of wet, untreated burlap and temporarily supported and protected from damage until permanently relocated and covered with backfill.

(f) Accidentally broken roots should be sawed cleanly 3 inches behind ragged end.

1.05 SECURITY:

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

1.06 TEMPORARY CONTROLS:

A. Noise Control

(1) Contractor acknowledges that adjacent facilities may remain in operation during all or a portion of the Work period, and it shall take all reasonable precautions to minimize noise as required by applicable laws and the Contract Documents.

(2) Notice of proposed noisy operations, including without limitation, operation of pneumatic demolition tools, concrete saws, and other equipment, shall be submitted to the District a minimum of forty-eight (48) hours in advance of their performance.

B. Noise and Vibration

(1) Equipment and impact tools shall have intake and exhaust mufflers.

(2) Contractor shall cooperate with District to minimize and/or cease the use of noisy and vibratory equipment if that equipment becomes objectionable by its longevity.

C. Dust and Dirt

(1) Contractor shall conduct demolition and construction operations to minimize the generation of dust and dirt, and prevent dust and dirt from interfering with the progress of the Work and from accumulating in the Work and adjacent areas including, without limitation, occupied facilities.

(2) Contractor shall periodically water exterior demolition and construction areas to minimize the generation of dust and dirt.

(3) Contractor shall ensure that all hauling equipment and trucks carrying loads of soil and debris shall have their loads sprayed with water or covered with tarpaulins, and as otherwise required by local and state ordinance.

(4) Contractor shall prevent dust and dirt from accumulating on walks, roadways, parking areas, and planting, and from washing into sewer and storm drain lines.

D. Water

Contractor shall not permit surface and subsurface water, and other liquids, to accumulate in or about the vicinity of the Premises. Should accumulation develop, Contractor shall control the water or other liquid, and suitably dispose of it by means of temporary pumps, piping, drainage lines, troughs, ditches, dams, or other methods.

E. Pollution

(1) No burning of refuse, debris, or other materials shall be permitted on or in the vicinity of the Premises.

(2) Contractor shall comply with applicable regulatory requirements and anti-pollution ordinances during the conduct of the Work including, without limitation, demolition, construction, and disposal operations.

F. Lighting

(1) If portable lights are used after dark, all light must be located so as not to direct light into neighboring property.

1.07 JOB SIGN(S):

A. General:

(1) Contractor shall provide and maintain a Project identification sign with the design, text, and colors designated by the District and/or the Architect; locate sign as approved by the District.

(2) Signs other than the specified Project sign and or signs required by law, for safety, or for egress, shall not be permitted, unless otherwise approved in advance by the District.

B. Materials:

(1) Structure and Framing: Structurally sound, new or used wood or metal; wood shall be nominal 3/4-inch exterior grade plywood.

(2) Sign Surface: Minimum 3/4-inch exterior grade plywood.

(3) Rough Hardware: Galvanized.

(4) Paint: Exterior quality, of type and colors selected by the District and/or the Architect.

C. Fabrication:

(1) Contractor shall fabricate to provide smooth, even surface for painting.

(2) Size: 4'-0" x 8'-0", unless otherwise indicated.

(3) Contractor shall paint exposed surfaces of supports, framing, and surface material with exterior grade paint: one coat of primer and one coat of finish paint.

(4) Text and Graphics: As indicated.

1.08 PUBLICITY RELEASES:

A. Contractor shall not release any information, story, photograph, plan, or drawing relating information about the Project to anyone, including press and other public communications medium, including, without limitation, on website(s).

PART 2 – PRODUCTS Not used.

PART 3 – EXECUTION Not used.

END OF DOCUMENT

SECTION 01 50 13

CONSTRUCTION WASTE MANAGEMENT & DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

A. Section specified diversion of construction and demolition debris from landfill.

B. Related requirements specified elsewhere include:

   1. Section 01 31 19, Project Management and Coordination

1.2 SYSTEM DESCRIPTION

A. In accordance with the requirements of the District, the Contractor shall recycle construction and demolition materials.

B. The District’s Construction and Demolition Ordinance requires that at least 65 percent of all construction and demolition debris generated by this project be reused or recycled.

C. The District has developed a standard Waste Management Plan and list of the District’s permitted recycling transporters to assist the Contractor in meeting this requirement.

D. A complete copy of the District’s Construction and Demolition Ordinance, as well as a directory of construction and demolition recycling facilities in the Bay Area, are available from the District upon request.

1.3 DEFINITIONS

A. “Conversion Rate” means the rate set forth in the Conversion Rate Table approved by the District for use in estimating the weight of materials identified in the Waste Reduction and Recycling Plan.

B. “Divert” means to use material for any purpose other than disposal in a landfill or transfer facility.

C. “Good faith” per the District’s Construction and Demolition Debris Waste Reduction and Recycling Ordinance.

D. “Net cost” means that the following have been subtracted from the cost of separating and recycling:
   1. Revenue from the sale of recycled or salvaged materials.
   2. Landfill tipping fees saved due to diversion of materials from the landfill.

E. “Recycling Service means an off-site service that provides processing of material and diversion from landfill.

F. “Hauler” means the entity who transports construction and demolition debris to either a landfill or a recycling service.

1.4 SUBMITTALS

A. Submit specified Waste Reduction and Recycling Plan, included in Appendix of this Project Manual, to indicate how waste will be diverted from landfills.

B. Submit completed Waste Reduction and Recycling Summary Reports forms, included in Appendix of this Project Manual, at the completion of the demolition work and at 50 and at 100 percent completion of the construction work.

1.5 QUALITY ASSURANCE

A. Regulatory requirements:

1. Comply with District’s Construction and Demolition Debris Waste Reduction and Recycling Ordinance.
2. Approval of the Waste Reduction and Recycling Plan by the District is required before issuing a demolition, building permit, and beginning of demolition and on-site mobilization work.

B. Recycling Service Company: See requirements for recycling transporters included in the Appendix of this Project Manual. Any recycling service that will certify in writing that accepted construction and demolition debris will be diverted from landfill, not dumped illegally, or dumped at sea.

1.6 WASTE MANAGEMENT PLAN

A. Plan Development: The plan shall include the following information:

1. The estimated volume or weight of project construction and demolition debris, by materials type to be generated; and
2. The maximum volume or weight of such materials that can feasibly be diverted via reuse or recycling; and
3. The estimated volume or weight of such material that will be landfilled; and
4. If self-hauling the waste, the facilities proposed to recycle/landfill the debris; or
5. If sub-contracting with a recycling transporter, the name of the transporter.

B. Plan Review: The District will review and approve the Contractor’s Recycling Plan prior to construction.

1. Within 30 days after the project completion, the Contractor shall complete the remainder of the Waste Reduction and Recycling Form and return to the District with the appropriate receipts.
2. If the District determines that the Contractor has not made a food faith effort to comply with the District Ordinance, or if the Contractor fails to submit the documentation required within the required time period, then a reduction of $10,000.00 towards payment on the Contract shall be made. These funds shall be deposited into a special account and used for the purposes of promoting recycling within the District.

C. Plan Implementation:

1. Maintain log of each load, of each category item diverted from landfill. Log in separately debris sent to a Class III landfill and materials sent to recycling facilities.
    a. Include in log, type of load, load weight, name of hauling service; recycling service or landfill, and date accepted by recycling service or by landfill.
    b. Owner reserves the right to audit the log at any time, retain and make available, all weight tickets, copies of receipt and invoices.
    c. Units of Measure: Use same units as stated in the approved plan “good faith” estimate of construction waste that would be generated if no remedial methods were implemented.
    d. Excavated soil and land clearing debris 100 percent of the trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. Exception: Reuse, either on-or off-site, of vegetation or soil contaminated by disease or pest infestation.
2. Material handling
    a. Separation Facilities:
        1) Designate a specific on-site area or areas to facilitate separation of materials for potential reuse, salvage, recycling, and return.
        2) Keep waste bins and pile areas neat and clean. Clearly mark bins for each category of waste. Do not commingle non-recyclable waste with materials designated for reuse or recycling.
    b. Environmental Controls During Handling, Storage, or Transport: Do not permit-designated materials to become contaminated or to contaminate site or surround areas.
3. Training and Coordination:
    a. Furnish copies of the Waste Management Plan to all on-site supervisors, each subcontractor, the District, and the Landscape Architect.
    b. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse and return methods to be used by all entities at the appropriate stages of the Project.
    c. Meeting: Include construction waste management on the agenda of meetings. At a minimum, discuss waste management goals and issues at the following meetings:
        1) Pre-bid meetings.
        2) Pre-construction meeting.
        3) Regularly scheduled job-site meetings.

D. Hazardous waste: Separate hazardous waste. Store and dispose of according to local regulations.

END OF SECTION

DOCUMENT 01 52 13

FIELD OFFICES

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions;

B. Special Conditions; and

C. Temporary Facilities and Controls.

1.02 SECTION INCLUDES:

A. Requirements for Field Offices and Field Office Trailers.

1.03 SUMMARY:

A. General: Contractor shall provide District's Field Office Trailer and contents, for District's use exclusively, during the term of the Contract.

B. Property: Trailer, furniture, furnishings, equipment, and the like, supplied by the Contractor with the Office Trailer shall remain the property of the Contractor; District property items installed, delivered, and the like by District within the Office Trailer will remain District's property.

C. Modifications: District reserves the right to modify the trailer or contents, or both, as may be deemed proper by District.

D. Condition: Trailer and contents shall be clean, neat, substantially finished, in good, proper, and safe condition for use, operation, and the like; the trailer and contents shall not be required to be new.

E. Installation Timing: Provide safe, fully furnished, functional, proper, complete, and finished trailer properly ready for entire use, within fourteen (14) calendar days of District's notification of the issuance of Notice to Proceed.

1.04 SUBMITTALS:

A. General: Submit submittals to District in quantity, format, type, and the like, as specified herein.

B. Office Trailer Data: One (1) copy of manufacturer's descriptive data, technical descriptions, regulatory compliance, industry standards, installation, removal, and maintenance instructions.

C. Equipment Data: Two (2) copies of manufacturer data for each type of equipment, if directed by District.

D. Furniture and Furnishings Data: Two (2) copies of manufacturer data for each type of equipment, if directed by District.

E. Plans: One (1) reproducible copy of appropriately scaled plans of trailer layout. Plans shall include, but not be limited to: lighting; furniture; equipment; telephone and electrical outlets; and the like.

F. Product Samples: One (1) complete and entire unit of each type, if directed by District.

1.05 QUALITY ASSURANCE

A. Standards: In the event that provisions of codes, regulations, safety orders, Contract Documents, referenced manufacturer's specifications, manufacturer's instructions, industry standards, and the like, are in conflict, the more restrictive and higher quality shall govern.

B. Installer: Installer or Installers engaged by Contractor must have a minimum of five (5) years of documented and properly authenticated successful experience of specialization in the installation of the items or systems, or both, specified herein.

C. Manufacturer: Contractor shall obtain products from nationally and industry recognized Manufacturer with five (5) years minimum, of immediately recent, continuous, documented and properly authenticated successful experience of specialization in the manufacture of the product specified herein.

D. State Personnel Training: Provide proper training for maintenance and operations, including emergency procedures, and the like, as directed by District.

E. Units: Shall be sound and free of defects, and shall not include any damage or defect that will impair the safety, installation, performance, or the durability of the entire Office Trailer and appurtenant systems.

1.06 REGULATORY REQUIREMENTS

A. General: Work shall be executed in accordance with applicable Codes, Regulations, Statutes, Enactment's, Rulings, Laws, each authority having jurisdiction, and including, but not limited to, Regulatory Requirements specified herein.

B. California Building Standards Code ("CBSC").

C. California Code of Regulations, Title 25, Chapter 3, Sub Chapter 2, Article 3 ("CCR").

D. Coach Insignia: Trailer shall display California Commercial Coach Insignia; such insignia shall be deemed to show that the trailer is in accordance with the Construction and Fire Safety requirements of CCR.

PART 2 – PRODUCTS

2.01 FIELD OFFICE TRAILER

A. General: Provide entire Field Office Trailer of type, function, operation, capacity, size, complete with controls, safety devices, accessories, and the like, for proper and durable installation. Partitions, walls, ceiling, and other interior and exterior surfaces shall be appropriately finished, including, but not limited to, trim, painting, wall base, floor covering, suspended or similar ceiling, and the like; provide systems, components, units, nuts, bolts, screws, anchoring devices, fastening devices, washers, accessories, adhesives, sealants, and other items of type, grade, and class required for the particular use, not identified but required for a complete, weather-tight, appropriately operating, and finished installation.

B. Manufacturers: General Electric Capital Modular Space; The Space Place, Inc.; or equal.

C. Program: Provide a wheel-mounted trailer with stairs, landings, platforms, ramps, stairs, platforms, and the like, in good, proper, safe, clean, and properly finished condition; with proper heavy duty locks, and other proper and effective security at all doors, windows, and the like. Trailer shall be maintained in good, proper, safe, clean, and properly finished condition during the Contract.

(1) Nominal Trailer Size: Four hundred eighty (480) square feet, minimum.

(2) Stairs, Platform: Properly finished stairs, platforms, and ramps.

(3) Doors: Two (2), three (3) foot wide exterior doors with locksets; finished ramp, steps, and entry platform at each exterior door.

(4) Keys: Submit five (5) keys for each door, window, furniture unit, and the like, there shall be no other key copies or originals available; each key shall be identified for District; and shall be labeled, or tagged or both, as directed by District.

(5) HVAC: **[PROVIDE DESCRIPTION OR DELETE]**

(6) Lighting: Sixty-five (65) foot-candles illumination minimum at any point, at thirty (30) inches above finished floor throughout from fluorescent light source, exclusively, or as directed by District.

(7) Electrical Outlets: One (1) duplex outlet evenly spaced every twelve (12) linear horizontal feet of wall face, and electrical service ready for use.

(8) Telephones and Telephone Outlets: Two (2) telephone lines wired, connected to telephone utility service, and ready for use, and two (2) telephone instruments, each with two (2)-line capability, speed dial and hands-free feature. Locate each outlet as directed by District.

(9) Answering Machine: One (1) unit, two (2)-line; digital.

2.02 FIELD OFFICE TRAILER ITEMS

A. General: Provide the Field Office Trailer with the following arranged into two (2) workstations:

  (1) Desks: Two (2) desks: thirty-six (36) inches by sixty (60) inches; steel, laminated plastic top; locking, one (1) or two (2) file drawers single pedestal; steel; provide five (5) keys to District.

  (2) Tables: Two (2) tables; thirty-six (36) inches by sixty (60) inches; twenty-nine (29) inches high; steel, laminated plastic top tables; one (1) at each desk.

  (3) Chairs: Two (2) chairs: swivel; steel; with seat cushion and arms; one (1) at each desk.

  (4) Waste Baskets: Two (2) waste baskets, one at each desk.

B. Furniture and Equipment: Provide in the space located to effect efficient and logical use.

  (1) File Cabinet: One (1) file cabinet: four (4) drawer; lateral; steel locking.

  (2) Plan Table: One (1) plan table: thirty-six (36) inches deep by seventy-two (72) inches wide by forty-two (42) inches high; adjustable; wood or steel; with lockable plan and pencil drawers.

  (3) Drafting Stool: One (1) drafting stool; swiveling; steel; padded; adjustable; with footrest and casters.

  (4) Bookshelf: One (1) bookshelf: thirty-six (36) inches deep by seventy-two (72) inches wide by forty-two (42) inches high; adjustable; wood or steel; with lockable plan and pencil drawer.

  (5) Plan Rack: One (1) wheel mounted plan rack.

  (6) Waste Baskets: One (1) large waste basket.

  (7) Coat/Hat Hanger: Wall mounted with minimum capacity for four (4) garments and ten (10) hats.

  (8) Document Management System: Shall include an integrated high-volume printer, copier, and facsimile machine, including stand, base, and storage cabinet; and shall include the following features:

    (a) Type: Laser, dry electrostatic transfer, plain paper, digital, multi-function imaging system.

    (b) Network: Ethernet or Token Ring network ready, Plug-and-Play.

    (c) Print, send/receive facsimile from any connected workstation.

    (d) Resolution: Six hundred (600) dots per inch by six hundred (600) dots per inch, minimum.

(e) Print Speed: Twenty (20) pages per minute, minimum.

(f) Copies: Twenty (20) copies per minute, minimum.

(g) Document Handler: Forty (40) sheet, minimum

(h) Collator: Forty (40) bin, minimum, with stapling.

(i) Duplexing: Capable.

(j) Paper Size: Capable of handling paper sizes to eleven (11) inches by seventeen (17) inches.

(k) Paper Cassettes: One (1) each for eight and one half (8.5) inches by eleven (11) inches, eight and one half (8.5) inches by fourteen (14) inches, and eleven (11) inches by seventeen (17) inches paper sizes; minimum two hundred fifty (250) sheets per cassette.

(l) Reduction/Enlargement: Capable of reduction to twenty-five percent (25%) and enlargement to two hundred percent (200%).

(m) Facsimile Electronic Storage: Capable of storing minimum of fifty (50) speed dial numbers, group faxing and broadcast faxing.

(n) Facsimile Scanning: Capable of scanning into memory a minimum of one hundred (100) pages with maximum scan time of three (3) seconds per page.

(o) Halftone: Sixty-four (64) levels.

(p) Redial: Automatic and Manual.

(9) Maintenance: Contractor shall purchase service agreements for each unit of equipment for the duration of the project plus two (2) months, and shall maintain all equipment in proper working condition. Service agreements shall include provision for replacement of toner cartridges and other items required to effect proper unit use. Service agreements shall also provide for:

(a) Unlimited Service Calls.

(b) Same Day Response.

(c) All parts, labor, preventative maintenance and mileage.

(d) All chemicals, such as toner, fixing agent, and the like.

(e) System training and setup.

(10) Portable Toilets: Two (2); each shall include a urinal; each unit shall be a properly enclosed chemical unit conforming to ANSI Z4.3.

(a) Location: As directed by District.

(b) Maintenance: Maintain each unit and surrounding areas in a clean, hygienic and orderly manner, at all time. Empty, clean, and sanitize each unit each day at a location and time as directed by District.

(c) Removal: Relocate, or remove from the site, each Portable Toilet. Upon such directive by District, the Contractor shall forthwith relocate or remove each Portable Toilet and submit the affected areas to a condition which existed prior to the installation of each Portable Toilet, within three (3) calendar days, or as directed by District in writing, at no cost to District.

2.03 UTILITY AND SERVICES

A. Telephone Service: Contractor shall provide and interface the entire telephone service, and shall properly and timely pay for telephone service for District's non-long-distance use.

B. Electrical Service: Provide all proper connections and continuously pay for service for the duration of the Work.

2.04 FINISHES

A. General: Manufacturer standard finish system over surfaces properly cleaned, pretreated, and prepared to obtain proper bond; all visible surfaces shall be coated.

B. Finish: Color as selected by District from manufacturer standard palette.

PART 3 – EXECUTION

3.01 INSTALLATION

A. General: Properly prepare area and affected items to receive the Work. Set Work accurately in location, alignment, and elevation; rigidly, securely, and firmly anchor to appropriate structure; install plumb, straight, square, level, true, without racking, rigidly anchored to proper solid blocking, substrate, and the like; provide appropriate type and quantity of reinforcements, fasteners, adhesives, self-adhesive and other tapes; lubricants, coatings, accessories, and the like, as required for a complete, structurally rigid, stable, sound, and appropriately finished installation, in accordance with manufacturer's published instructions, and as indicated. The more restrictive and higher quality requirement shall govern. Moving parts shall be properly secured, without binding, looseness, noise, and the like.

B. Installation: Install in accordance with 25 CCR 3.2.3 and as directed by District; jack up trailer and level both ways; mount on proper concrete piers with all load off wheels; provide required tie down and accessories per Section 4368 of referenced CCR, and as directed by District.

C. Rejected Work: Work, materials, unit, items, systems, and the like, not accepted by District shall be deemed rejected, and shall forthwith be removed and replaced with proper and new Work, materials, unit, items, systems, and the like at no cost to District.

D. Standard: Comply with manufacturer's published instructions, or with instructions as shown or indicated; the more restrictive and higher quality requirement shall govern.

E. Location: As directed by District.

F. Fire Resistance: Construct and install in accordance with UL requirements.

G. Maintenance: Contractor shall maintain trailer and adjacent areas in a safe, clean and hygienic condition throughout the duration of the Work, and as directed by District. Properly repair or replace furniture or other items, as directed by District. Properly remove unsafe, damaged, or broken furniture, or similar items, and replace with safe and proper items. Contractor shall pay cost of all services, repair, and maintenance, or replacement of each item.

H. Janitorial Service: Provide professional janitorial services, including, but not limited to, trash, waste paper baskets, fill paper dispensers; clean and dust all furniture, files, and the like; sweep and mop resilient and similar flooring; and vacuum carpeting and similar flooring.

(1) Frequency: Two (2) times per week, minimum.

I. Removal: Properly remove the Office Trailer and contents from the Site upon completion of the Contract, or as directed by District in writing. Forthwith properly patch and repair affected areas; replace damaged items with new items. Carefully and properly inventory, clean, pack, store, and protect District property; submit District property to District at a date, time and location as directed by District.

END OF DOCUMENT

SECTION 01 56 16

DUST CONTROL

PART 1 - GENERAL

1.1 WORK INCLUDED

A. This work shall consist of alleviation of dust nuisance throughout the duration of work applying either water or soil stabilizers, or both.

1.2 QUALITY ASSURANCE

A. Dust Control shall conform to Section 10-5 of the Caltrans Standard Specifications.

B. The Contractor shall also comply with all District dust control regulations and ordinances, which apply to any work pursuant to the Contract.

C. The Project Inspector will review the dust control measures performed by the Contractor. If for any reason the Project Inspector or the District is not satisfied with the dust control operation on any day, the Contractor shall be obligated to take whatever measures are required by the Project Inspector or the District to correct the situation, at no additional cost to the contract.

D. Whenever the Contractor shall appear to be negligent in controlling dust, the Project Inspector or the District may direct attention to the existence of the dust hazard and instruct the Contractor to alleviate the hazard immediately. The Project Inspector or the District may order all grading and/or trenching operations stopped until the dust problem is eliminated.

E. The Project Inspector or the District may require, at any time, that the Contractor use a soil stabilizer, mulch, or other approved measures to increase dust control effectiveness.

PART 2 - PRODUCTS

2.1 SOIL STABILIZERS

A. Soil stabilizers shall be non-toxic and shall be approved by the District.

2.2 HYDROSEED

A. The District shall approve Hydroseed for dust control.

PART 3 - EXECUTION

3.1 PERFORMANCE

A. Water all active construction areas daily or more frequently if necessary.

B. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.

C. Apply water daily, or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.

D. Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.

E. Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets. Wash down of dirt and debris into the storm drain system will not be allowed.

F. Hydroseed or apply non-toxic soil stabilizers to construction areas that have been previously graded and that in the opinion of the District cause excessive neighborhood dust problems.

G. Enclose, cover, water daily or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).

H. Limit traffic speeds on unpaved roads to 15 mph.

I. Install sandbags or other erosion control measures to prevent silt runoff to public roadways.

J. Replant vegetation in disturbed areas as quickly as possible.

K. Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.

L. Suspend excavation and grading activities when winds (instantaneous gusts) exceed 25 mph. Except that, regardless of wind speed, construction-grading activity shall be discontinued in wind conditions that in the opinion of the District cause excessive neighborhood dust problems.

END OF SECTION

SECTION 01 56 19

NOISE CONTROL

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Construction activities shall be scheduled to have the least impact on residents.

PART 2 - PRODUCTS

NONE

PART 3 - EXECUTION

3.1 PERFORMANCE

A. Noise Control shall conform to Section 14-8 of the Caltrans Standard Specifications.

B. The Contractor shall also comply with all District sound control and noise level rules, regulations, and ordinances, which apply to any work performed pursuant to the Contract.

C. Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without said muffler.

D. The Contractor shall demonstrate to the District that all construction equipment that will be used on the project site is equipped with manufacturer-recommended mufflers or equivalent mitigation.

E. No work may begin prior to 7:00 am. This limitation includes the idling of equipment prior to the 7:00 am time limit.

F. Comply with Town of San Anselmo Requirements:

1. Weekday Work Hours: 7:00 am to 7:00 PM.
2. Saturdays: 9:00 am to 5:00 PM.
3. Sundays: : 12:00 PM to 5:00 PM.

END OF SECTION

DOCUMENT 01 64 00

OWNER-FURNISHED PRODUCTS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions;

B. Special Conditions; and

C. Materials and Equipment.

1.02 SECTION INCLUDES:

A. Requirements for the following:

(1) Installing Owner-furnished materials and equipment.

(2) Providing necessary utilities, connections and rough-ins.

1.03 DEFINITIONS

A. Owner: District, who is providing/furnishing materials and equipment.

B. Installer Contactor: Contractor, who is installing the materials and equipment furnished by the Owner.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING:

A. Receive, store and handle products in accordance with the manufacturer's instructions.

B. Protect equipment items as required to prevent damage during storage and construction.

PART 2 – PRODUCTS

2.01 GENERAL PRODUCT REQUIREMENTS:

A. Installer Contractor's Responsibilities:

(1) Verify mounting and utility requirements for Owner-furnished materials and equipment items.

(2) Provide mounting and utility rough in for all items where required.

(a) Rough in locations, sizes, capacities, and similar type items shall be as indicated and required by product manufacturer.

B. Owner and Installer Contractor(s) Responsibilities:

(1) Owner-Furnished/Contractor Installed ("OFCI"): Furnished by the Owner; installed by the Installer Contractor.

(a) General: Owner and Installer Contractor(s) will coordinate deliveries of materials and equipment to coincide with the construction schedule.

(b) Owner will furnish specified materials and equipment delivered to the site. Owner/vendor's representative shall be present on Site at the time of delivery to comply with the contract requirements and Specifications Section 01 43 00, Materials and Equipment, Article 1.04.

(c) The Owner furnishing specified materials and equipment is responsible to provide manufacturer guarantees as required by the Contract to the Installer Contractor.

(d) The Installer Contractor shall:

1) Review, verify and accept the approved manufacturer's submittal/Shop Drawings for all materials and equipment required to be installed by the Installer Contractor and furnished by the Owner. Any discrepancies, including but not limited to possible space conflicts, should be brought to the attention of the Project Manager and/or Program Manager, if applicable.

2) Coordinate timely delivery. Installer Contractor shall receive materials and equipment at Site when delivered and give written receipt at time of delivery, noting visible defects or omissions; if such declaration is not given, the Installer Contractor shall assume responsibility for such defects and omissions.

3) Store materials and equipment until ready for installation and protect from loss and damage. Installer Contractor is responsible for providing adequate storage space.

4) Coordinate with other bid package contractors and field measurement to ensure complete installation.

5) Uncrate, assemble, and set in place.

6) Provide adequate supports.

7) Install materials and equipment in accordance with manufacturer's recommendations, instructions, and Shop Drawings, supply labor and material required, and make mechanical, plumbing, and electrical connections required to operate equipment.

8) Be certified by equipment manufacturer for installation of the specific equipment supplied by the Owner.

9) Provide anchorage and/or bracing as required for seismic restraint per Title 24, UBC Standard 27-11 and all other applicable codes.

10) Provide the contract-required warranty and guarantee for all work, materials, equipment, and installation upon its completion and acceptance by the District. Guarantee includes all costs associated with the removal, shipping to and from the Site, and re-installation of any equipment found to be defective.

C. Compatibility with Space and Service Requirements:

(1) Equipment items shall be compatible with space limitations indicated and as shown on the Contract Documents and specified in other sections of the Specifications.

(2) Modifications to equipment items required to conform to space limitations specified for rough in shall not cause additional cost to the District.

D. Manufacturer's printed descriptions, specifications, and instructions shall govern the Work unless specifically indicated or specified otherwise.

2.02 FURNISHED MATERIALS AND EQUIPMENT

A. All furnished materials and equipment are indicated or scheduled on the Contract Documents.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Install equipment items in accordance with the manufacturer's instructions.

B. Set equipment items securely in place, rigidly or flexibly mounted in accordance with manufacturers' directions.

C. Make electrical and mechanical connections as indicated and required.

D. Touch-up and restore damaged or defaced finishes to the District's satisfaction.

3.02 CLEANING AND PROTECTION

A. Repair or replace items not acceptable to the Architect.

B. Upon completion of installation, clean equipment items in accordance with manufacturer's recommendations, and protect from damage until final acceptance of the Work by the District.

END OF DOCUMENT

SECTION 01 66 00

PRODUCT DELIVERY, STORAGE AND HANDLING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

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

A. General Conditions, including, without limitation, Site Access, Conditions and Requirements;

B. Special Conditions.

1.02 PRODUCTS

A. Products are as defined in the General Conditions.

B. Contractor shall not use and/or reuse materials and/or equipment removed from existing Premises, except as specifically permitted by the Contract Documents.

C. Contractor shall provide interchangeable components of the same manufacturer, for similar components.

1.03 TRANSPORTATION AND HANDLING

A. Contractor shall transport and handle Products in accordance with manufacturer's instructions.

B. Contractor shall promptly inspect shipments to confirm that Products comply with requirements, quantities are correct, and products are undamaged.

C. Contractor shall provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

1.04 STORAGE AND PROTECTION

A. Contractor shall store and protect Products in accordance with manufacturer's instructions, with seals and labels intact and legible. Contractor shall store sensitive products in weather-tight, climate controlled enclosures.

B. For exterior storage of fabricated Products, Contractor shall place on sloped supports, above ground.

C. Contractor shall provide off-site storage and protection when Site does not permit on-site storage or protection.

D. Contractor shall cover products subject to deterioration with impervious sheet covering and provide ventilation to avoid condensation.

E. Contractor shall store loose granular materials on solid flat surfaces in a well-drained area and prevent mixing with foreign matter.

F. Contractor shall provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.

G. Contractor shall arrange storage of Products to permit access for inspection and periodically inspect to assure Products are undamaged and are maintained under specified conditions.

PART 2 – PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

SECTION 01 71 23

FIELD ENGINEERING

PART 1 - GENERAL

1.1 SUMMARY

A. Inspect the site and location of the Work and become acquainted with conditions relating to the construction and completion of the Project.

B. Contractor shall provide and pay for field engineering services required for the Project, including subgrade survey and civil, structural or other professional engineering services required to construct the Project.

1.2 DESCRIPTION

A. Provide layout of work and establish lines and grades.

B. Related requirements specified elsewhere include making record documents - Section 01 77 00 Contract Closeout and Final Cleaning.

1.3 QUALITY ASSURANCE

A. The Contractor shall engage a California Registered Civil Engineer or licensed Land Surveyor to perform field engineering.

B. Submit name and address of professional engineer or surveyor for Owner's approval.

C. When discrepancies between drawings and actual site conditions are discovered, notify the District for instruction on how to proceed.

1.4 PERFORMANCE

A. Stakes and marks will be set by the Contractor as required to establish the lines, grades and locations required for the completion of the work specified on the plans. The minimum requirements for survey construction staking are as follows:

1. Establish indicated layout in relation to the property survey and existing reference points.
2. Layout work and be responsible for lines elevations and measurements of grading, paving, utilities and all other Work executed under Contract.
3. Establish and preserve permanent reference points during construction.
4. Existing Utilities: Verify onsite the location and depth (elevation) of existing utilities and services before performing excavation work.
5. Locate and protect control points prior to starting site work and preserve permanent reference points during construction.
6. Make no changes or relocations without prior written notice to the Owner's Representative.
7. Report to Owner' Representative when any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations.

8. Contractor shall have its surveyor replace Project control points that may be lost or destroyed and establish replacements based on the Owner's original survey with associated costs borne solely by Contractor.

9. Record "as-built" conditions.

B. Accuracy of Data: Site data indicated on the Drawings are as exact as could be obtained, but their accuracy cannot be guaranteed. Exact locations, distances, elevations and similar data shall be governed finally by field conditions and the Owner's instructions.

C. Verify layout from time to time as work progresses.

D. Exercise caution to verify figures shown on the Drawings and on surveys furnished by Owner before starting work. Contractor will be responsible for any error resulting from failure to exercise such caution.

  1. Report errors and inaccuracies, in writing to the Electrical Engineer and Owner's Representative for clarification.

  2. Offsets will be as agreed upon, in writing by the Contractor and Electrical Engineer and Owner.

END OF SECTION

DOCUMENT 01 73 29

CUTTING AND PATCHING

1. PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions, including, without limitation, Inspector, Inspections, and Tests, Integration of Work, Nonconforming Work, and Correction of Work, and Uncovering Work;

B. Special Conditions;

C. Hazardous Materials Procedures and Requirements;

D. Hazardous Materials Certification;

E. Lead-Based Paint Certification;

F. Imported Materials Certification.

1.02 CUTTING AND PATCHING:

A. Contractor shall be responsible for all cutting, fitting, and patching, including associated excavation and backfill, required to complete the Work or to:

(1) Make several parts fit together properly.

(2) Uncover portions of Work to provide for installation of ill-timed Work.

(3) Remove and replace defective Work.

(4) Remove and replace Work not conforming to requirements of Contract Documents.

(5) Remove Samples of installed Work as specified for testing.

(6) Provide routine penetrations of non-structural surfaces for installation of piping and electrical conduit.

(7) Attaching new materials to existing remodeling areas – including painting (or other finishes) to match existing conditions.

B. In addition to Contract requirements, upon written instructions from the District, Contractor shall uncover Work to provide for observations of covered Work in accordance with the Contract Documents; remove samples of installed materials for testing as directed by District; and remove Work to provide for alteration of existing Work.

C. Contractor shall not cut or alter Work, or any part of it, in such a way that endangers or compromises the integrity of the Work, the Project, or work of others.

1.03 SUBMITTALS:

A. Prior to any cutting or alterations that may affect the structural safety of Project, or work of others, and well in advance of executing such cutting or alterations, Contractor shall submit written notice to District pursuant to the applicable notice provisions of the Contract Documents, requesting consent to proceed with the cutting or alteration, including the following:

- (1) The work of the District or other trades.
- (2) Structural value or integrity of any element of Project.
- (3) Integrity or effectiveness of weather-exposed or weather-resistant elements or systems.
- (4) Efficiency, operational life, maintenance or safety of operational elements.
- (5) Visual qualities of sight-exposed elements.

B. Contractor's Request shall also include:

- (1) Identification of Project.
- (2) Description of affected Work.
- (3) Necessity for cutting, alteration, or excavations.
- (4) Affects of Work on District, other trades, or structural or weatherproof integrity of Project.
- (5) Description of proposed Work:
  - (a) Scope of cutting, patching, alteration, or excavation.
  - (b) Trades that will execute Work.
  - (c) Products proposed to be used.
  - (d) Extent of refinishing to be done.
- (6) Alternates to cutting and patching.
- (7) Cost proposal, when applicable.
- (8) The scheduled date the Contractor intends to perform the Work and the duration of time to complete the Work.

(9) Written permission of other trades whose Work will be affected.

1.04 QUALITY ASSURANCE:

A. Contractor shall ensure that cutting, fitting, and patching shall achieve security, strength, weather protection, and appearance for aesthetic match, efficiency, operational life, maintenance, safety of operational elements, and the continuity of existing fire ratings.

B. Contractor shall ensure that cutting, fitting, and patching shall successfully duplicate undisturbed adjacent profiles, materials, textures, finishes, colors, and that materials shall match existing construction. Where there is dispute as to whether duplication is successful or has been achieved to a reasonable degree, the District's decision shall be final.

1.05 PAYMENT FOR COSTS:

A. Cost caused by ill-timed or defective Work or Work not conforming to Contract Documents, including costs for additional services of the District, its consultants, including but not limited to the Construction Manager, the Architect, the Project Inspector(s), Engineers, and Agents, will be paid by Contractor and/or deducted from the Contract by the District.

B. District shall only pay for cost of Work if it is part of the original Contract Price or if a change has been made to the contract in compliance with the provisions of the General Conditions. Cost of Work performed upon instructions from the District, other than defective or nonconforming Work, will be paid by District on approval of written Change Order. Contractor shall provide written cost proposals prior to proceeding with cutting and patching.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Contractor shall provide for replacement and restoration of Work removed. Contractor shall comply with the Contract Documents and with the Industry Standard(s), for the type of Work, and the Specification requirements for each specific product involved. If not specified, Contractor shall first recommend a product of a manufacturer or appropriate trade association for approval by the District.

B. Materials to be cut and patched include those damaged by the performance of the Work.

PART 3 – EXECUTION

3.01 INSPECTION:

A. Contractor shall inspect existing conditions of the Site and the Work, including elements subject to movement or damage during cutting and patching, excavating and backfilling. After uncovering Work, Contractor shall inspect conditions affecting installation of new products.

B. Contractor shall report unsatisfactory or questionable conditions in writing to District as indicated in the General Conditions and shall proceed with Work as indicated in the General Conditions by District.

3.02 PREPARATION:

A. Contractor shall provide shoring, bracing and supports as required to maintain structural integrity for all portions of the Project, including all requirements of the Project.

B. Contractor shall provide devices and methods to protect other portions of Project from damage.

C. Contractor shall, provide all necessary protection from weather and extremes of temperature and humidity for the Project, including without limitation, any work that may be exposed by cutting and patching Work. Contractor shall keep excavations free from water.

3.03 ERECTION, INSTALLATION AND APPLICATION:

A. With respect to performance, Contractor shall:

(1) Execute fitting and adjustment of products to provide finished installation to comply with and match specified tolerances and finishes.

(2) Execute cutting and demolition by methods that will prevent damage to other Work, and provide proper surfaces to receive installation of repairs and new Work.

(3) Execute cutting, demolition excavating, and backfilling by methods that will prevent damage to other Work and damage from settlement.

B. Contractor shall employ original installer or fabricator to perform cutting and patching for:

(1) Weather-exposed surfaces and moisture-resistant elements such as roofing, sheet metal, sealants, waterproofing, and other trades.

(2) Sight-exposed finished surfaces.

C. Contractor shall execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances, and finishes as shown or specified in the Contract Documents including, without limitation, the Drawings and Specifications.

D. Contractor shall fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces. Contractor shall conform to all Code requirements for penetrations or the Drawings and Specifications, whichever calls for a higher quality or more thorough requirement. Contractor shall maintain integrity of both rated and non-rated fire walls, ceilings, floors, etc.

E. Contractor shall restore Work which has been cut or removed. Contractor shall install new products to provide completed Work in accordance with requirements of the Contract Documents and as required to match surrounding areas and surfaces.

F. Contractor shall refinish all continuous surfaces to nearest intersection as necessary to match the existing finish to any new finish.

END OF DOCUMENT

DOCUMENT 01 76 00

ALTERATION PROJECT PROCEDURES

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions, including, without limitation, Integration of Work, Purchase of Materials and Equipment, Uncovering of Work and Non-conforming Work and Correction of Work and Trenches;

B. Special Conditions.

PART 2 - PRODUCTS

2.01 PRODUCTS FOR PATCHING AND EXTENDING WORK:

A. New Materials: As specified in the Contract Documents including, without limitation, in the Specifications, Contractor shall match existing products, conditions, and work for patching and extending work.

B. Type and Quality of Existing Products: Contractor shall determine by inspection, by testing products where necessary, by referring to existing conditions and to the Work as a standard.

PART 3 - EXECUTION

3.01 EXAMINATION:

A. Contractor shall verify that demolition is complete and that areas are ready for installation of new Work.

B. By beginning restoration Work, Contractor acknowledges and accepts the existing conditions.

3.02 PREPARATION:

A. Contractor shall cut, move, or remove items as necessary for access to alterations and renovation Work. Contractor shall replace and restore these at completion.

B. Contractor shall remove unsuitable material not as salvage unless otherwise indicated in the Contract Documents. Unsuitable material may include, without limitation, rotted wood, corroded metals, and deteriorated masonry and concrete. Contractor shall replace materials as specified for finished Work.

C. Contractor shall remove debris and abandoned items from all areas of the Site and from concealed spaces.

D. Contractor shall prepare surface and remove surface finishes to provide for proper installation of new Work and finishes.

E. Contractor shall close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity. Contractor shall insulate ductwork and piping to prevent condensation in exposed areas. Contractor shall insulate building cavities for thermal and/or acoustical protection, as detailed.

3.03 INSTALLATION:

A. Contractor shall coordinate Work of all alternations and renovations to expedite completion and to accommodate District occupancy.

B. Designated Areas and Finishes: Contractor shall complete all installations in all respects, including operational, mechanical work and electrical work.

C. Contractor shall remove, cut, and patch Work in a manner to minimize damage and to provide a means of restoring Products and finishes to original or specified condition.

D. Contractor shall refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent finishes.

E. Contractor shall install products as specified in the Contract Documents, including without limitation, the Specifications.

3.04 TRANSITIONS:

A. Where new Work abuts or aligns with existing, Contractor shall perform a smooth and even transition. Patched Work must match existing adjacent work in texture and appearance.

B. When finished surfaces are cut so that a smooth transition with new Work is not possible, Contractor shall terminate existing surface along a straight line at a natural line of division and make a recommendation for resolution to the District and the Architect for review and approval.

3.05 ADJUSTMENTS:

A. Where removal of partitions or walls results in adjacent spaces becoming one, Contractor shall rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.

B. Where a change of plane of 1/4 inch or more occurs, Contractor shall submit a recommendation for providing a smooth transition to the District and the Architect for review and approval.

C. Contractor shall trim existing doors as necessary to clear new floor finish and refinish trim as required.

D. Contractor shall fit Work at penetrations of surfaces.

3.06 REPAIR OF DAMAGED SURFACES:

A. Contractor shall patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.

B. Contractor shall repair substrate prior to patching finish.

3.07 CULTIVATED AREAS AND OTHER SURFACE IMPROVEMENTS:

A. Cultivated or planted areas and other surface improvements which are damaged by actions of the Contractor shall be restored by Contractor to their original condition or better, where indicated.

B. Contractor shall protect and replace, if damaged, all existing guard posts, barricades, and fences.

C. Contractor shall give special attention to avoid damaging or killing trees, bushes and/or shrubs on the Premises and/or identified in the Contract Documents, including without limitation, the Drawings.

3.08 FINISHES:

A. Contractor shall finish surfaces as specified in the Contract Documents, including without limitations, the provisions of all Divisions of the Specifications.

B. Contractor shall finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, Contractor shall refinish entire surface to nearest intersections.

3.09 CLEANING:

A. Contractor shall continually clean the Site and the Premises as indicated in the Contract Documents, including without limitation, the provisions in the General Conditions and the Specifications regarding cleaning.

END OF DOCUMENT

Section 01 77 00

CONTRACT CLOSEOUT & FINAL CLEANING

PART 1- GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

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

A. General Conditions, including, without limitation, Completion of Work;

B. Special Conditions;

C. Temporary Facilities and Controls.

1.02 CLOSEOUT PROCEDURES

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

1.03 FINAL CLEANING

A. Contractor shall execute final cleaning prior to final inspection.

B. Contractor shall clean interior and exterior glass and all surfaces exposed to view; remove temporary labels, tape, stains, and foreign substances, polish transparent and glossy surfaces, wax and polish new vinyl floor surfaces, vacuum carpeted and soft surfaces.

C. Contractor shall clean equipment and fixtures to a sanitary condition.

D. Contractor shall replace filters of operating equipment.

E. Contractor shall clean debris from roofs, gutters, down spouts, and drainage systems.

F. Contractor shall clean Site, sweep paved areas, and rake clean landscaped surfaces.

G. Contractor shall remove waste and surplus materials, rubbish, and construction facilities from the Site and surrounding areas.

1.04 ADJUSTING

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

1.05 RECORD DOCUMENTS AND SHOP DRAWINGS

A. Contractor shall legibly mark each item to record actual construction, including:

(1) Measured depths of foundation in relation to finish floor datum.

(2) Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permit surface improvements.

(3) Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.

(4) Field changes of dimension and detail.

(5) Details not on original Contract Drawings

(6) Changes made by modification(s).

(7) References to related Shop Drawings and modifications.

B. Contractor will provide one set of Record Drawings to District.

C. Contractor shall submit all required documents to District and/or Architect prior to or with its final Application for Payment.

1.06 INSTRUCTION OF DISTRICT PERSONNEL

A. Before final inspection, at agreed upon times, Contractor shall instruct District's designated personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. For equipment requiring seasonal operation, Contractor shall perform instructions for other seasons within six months or by the change of season.

C. Contractor shall use operation and maintenance manuals as basis for instruction. Contractor shall review contents of manual with personnel in detail to explain all aspects of operation and maintenance.

D. Contractor shall prepare and insert additional data in Operation and Maintenance Manual when the need for such data becomes apparent during instruction.

E. Contractor shall review contents of manual with personnel in detail to explain all aspects of operation and maintenance.

1.07 SPARE PARTS AND MAINTENANCE MATERIALS

A. Contractor shall provide products, spare parts, maintenance, and extra materials in quantities specified in the Specifications and in Manufacturer's recommendations.

B. Contractor shall provide District with all required Operation and Maintenance Data at one time. Partial or piecemeal submissions of Operation and Maintenance Data will not be accepted.

PART 2 – PRODUCTS Not used.

PART 3 – EXECUTION Not used.

END OF SECTION

DOCUMENT 01 78 23

OPERATION AND MAINTENANCE DATA

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions, including, without limitation, Completion of the Work;

B. Special Conditions.

1.02 QUALITY ASSURANCE:

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

1.03 FORMAT:

A. Contractor shall prepare data in the form of an instructional manual entitled "OPERATIONS AND MAINTENANCE MANUAL & INSTRUCTIONS" ("Manual").

B. Binders: Contractor shall use commercial quality, 8-1/2 by 11 inch, three-side rings, with durable plastic covers; two inch maximum ring size. When multiple binders are used, Contractor shall correlate data into related consistent groupings.

C. Cover: Contractor shall identify each binder with typed or printed title "OPERATION AND MAINTENANCE MANUAL & INSTRUCTIONS"; and shall list title of Project and identify subject matter of contents.

D. Contractor shall arrange content by systems process flow under section numbers and sequence of Table of Contents of the Contract Documents.

E. Contractor shall provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.

F. Text: The content shall include Manufacturer's printed data, or typewritten data on 24 pound paper.

G. Drawings: Contractor shall provide with reinforced punched binder tab and shall bind in with text; folding larger drawings to size of text pages.

1.04 CONTENTS, EACH VOLUME:

A. Table of Contents: Contractor shall provide title of Project; names, addresses, and telephone numbers of the Architect, any engineers, subconsultants, Subcontractor(s), and Contractor with name of responsible parties; and schedule of products and systems, indexed to content of the volume.

B. For Each Product or System: Contractor shall list names, addresses, and telephone numbers of Subcontractor(s) and suppliers, including local source of supplies and replacement parts.

C. Product Data: Contractor shall mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

D. Drawings: Contractor shall supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Contractor shall not use Project Record Documents as maintenance drawings.

E. Text: The Contractor shall include any and all information as required to supplement product data. Contractor shall provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

F. Warranties and Bonds: Contractor shall bind in one copy of each.

1.05 MANUAL FOR MATERIALS AND FINISHES:

A. Building Products, Applied Materials, and Finishes: Contractor shall include product data, with catalog number, size, composition, and color and texture designations. Contractor shall provide information for re-ordering custom manufactured products.

B. Instructions for Care and Maintenance: Contractor shall include Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

C. Moisture Protection and Weather Exposed Products: Contractor shall include product data listing applicable reference standards, chemical composition, and details of installation. Contractor shall provide recommendations for inspections, maintenance, and repair.

D. Additional Requirements: Contractor shall include all additional requirements as specified in the Specifications.

E. Contractor shall provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.06 MANUAL FOR EQUIPMENT AND SYSTEMS:

A. Each Item of Equipment and Each System: Contractor shall include description of unit or system, and component parts and identify function, normal operating characteristics, and limiting conditions. Contractor shall include performance curves, with engineering data and tests, and complete nomenclature, and commercial number of replaceable parts.

B. Panelboard Circuit Directories: Contractor shall provide electrical service characteristics, controls, and communications.

C. Contractor shall include color coded wiring diagrams as installed.

D. Operating Procedures: Contractor shall include start-up, break-in, and routine normal operating instructions and sequences. Contractor shall include regulation, control, stopping, shut-down, and emergency instructions. Contractor shall include summer, winter, and any special operating instructions.

E. Maintenance Requirements: Contractor shall include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

F. Contractor shall provide servicing and lubrication schedule, and list of lubricants required.

G. Contractor shall include manufacturer's printed operation and maintenance instructions.

H. Contractor shall include sequence of operation by controls manufacturer.

I. Contractor shall provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

J. Contractor shall provide control diagrams by controls manufacturer as installed.

K. Contractor shall provide Contractor's coordination drawings, with color coded piping diagrams as installed.

L. Contractor shall provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

M. Contractor shall provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

N. Additional Requirements: Contractor shall include all additional requirements as specified in Specification(s).

O. Contractor shall provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.08 SUBMITTAL:

A. Contractor shall submit to the District for review two (2) copies of preliminary draft or proposed formats and outlines of the contents of the Manual within thirty (30) days of Contractor’s start of Work.

B. For equipment, or component parts of equipment put into service during construction and to be operated by District, Contractor shall submit draft content for that portion of the Manual within ten (10) days after acceptance of that equipment or component.

C. Contractor shall submit two (2) copies of a complete Manual in final form prior to final Application for Payment. Copy will be returned with Architect/Engineer comments. Contractor must revise the content of the Manual as required by District prior to District's approval of Contractor’s final Application for Payment.

D. Contractor must submit two (2) copies of revised Manual in final form within ten (10) days after final inspection.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

DOCUMENT 01 78 36

WARRANTIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

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

A. General Conditions, including, without limitation, Warranty/Guarantee Information;

B. Special Conditions.

1.02 FORMAT

A. Binders: Contractor shall use commercial quality, 8-1/2 by 11 inch, three-side rings, with durable plastic covers; two inch maximum ring size.

B. Cover: Contractor shall identify each binder with typed or printed title "WARRANTIES" and shall list title of Project.

C. Table of Contents: Contractor shall provide title of Project; name, address, and telephone number of Contractor and equipment supplier, and name of responsible principal. Contractor shall identify each item with the number and title of the specific Specification, document, provision, or section in which the name of the product or work item is specified.

D. Contractor shall separate each warranty with index tab sheets keyed to the Table of Contents listing, providing full information and using separate typed sheets as necessary. Contractor shall list each applicable and/or responsible Subcontractor(s), supplier(s), and/or manufacturer(s), with name, address, and telephone number of each responsible principal(s).

1.03 PREPARATION:

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

B. Contractor shall verify that documents are in proper form, contain full information, and are notarized, when required.

C. Contractor shall co-execute submittals when required.

D. Contractor shall retain warranties until time specified for submittal.

1.04 TIME OF SUBMITTALS:

A. For equipment or component parts of equipment put into service during construction with District's permission, Contractor shall submit a draft warranty for that equipment or component within ten (10) days after acceptance of that equipment or component.

B. Contractor shall submit for District approval all warranties and related documents within ten (10) days after date of completion. Contractor must revise the warranties as required by the District prior to District's approval of Contractor's final Application for Payment.

C. For items of work delayed beyond date of completion, provide updated submittal within ten days after acceptance, listing the date of acceptance as start of warranty period.

PART 2 - PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

DOCUMENT 01 78 39

RECORD DOCUMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions, including, without limitation, Documents on Work;

B. Special Conditions.

PART 2 - RECORD DRAWINGS

2.01 GENERAL:

A. As indicated in the Contract Documents, the District will provide Contractor with one 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.

2.02 RECORD DRAWING INFORMATION:

A. Contractor shall record the following information:

(1) Locations of Work buried under or outside each building, including, without limitation, all utilities, plumbing and electrical lines, and conduits.

(2) Actual numbering of each electrical circuit.

(3) Locations of significant Work concealed inside each building whose general locations are changed from those shown on the Contract Drawings.

(4) Locations of all items, not necessarily concealed, which vary from the Contract Documents.

(5) Installed location of all cathodic protection anodes.

(6) Deviations from the sizes, locations, and other features of installations shown in the Contract Documents.

(7) Locations of underground work, points of connection with existing utilities, changes in direction, valves, manholes, catch basins, capped stubouts, invert elevations, etc.

(8) Sufficient information to locate Work concealed in each building with reasonable ease and accuracy.

In some instances, this information may be recorded by dimension. In other instances, it may be recorded in relation to the spaces in the building near which it was installed.

B. Contractor shall provide additional drawings as necessary for clarification.

C. Contractor shall provide reproducible record drawings, made from final Shop Drawings marked "No Exceptions Taken" or "Approved as Noted."

PART 3 - RECORD SPECIFICATIONS

3.01 GENERAL:

Contractor shall mark each section legibly to record manufacturer, trade name, catalog number, and supplier of each Product and item of equipment actually installed.

PART 4 - MAINTENANCE OF RECORD DOCUMENTS

4.01 GENERAL

A. Contractor shall store Record Documents apart from documents used for construction as follows:

(1) Provide files and racks for storage of Record Documents.

(2) Maintain Record Documents in a clean, dry, legible condition and in good order.

B. Do not use Record Documents for construction purposes.

PART 5 – PRODUCTS Not Used.

END OF DOCUMENT

SECTION 02 40 00

DEMOLITION, REMOVALS, AND/OR ABANDONMENTS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Demolition, removal, or abandonment of existing artificial materials such as structures, vaults and foundations, fences, asphalt concrete, concrete, curbs, walks, piping, poles, etc.

B. Dust alleviation and control.

C. Cleanup and disposal of demolished or removed materials.

1.2 QUALITY ASSURANCE

A. All demolition, removals, and/or abandonments shall meet with the approval of the Project Inspector and the District.

B. Use of explosives for demolition will not be permitted.

C. Backfill density testing shall be performed in accordance with Section 31 00 00 titled Earthwork.

D. Contractor shall coordinate with the Owners of the specific utility regarding proper demolition, removal or abandonment procedure required by the Owner of each utility.

PART 2 - PRODUCTS

2.1 BACKFILL MATERIAL

A. Backfill material shall be as specified in Section 31 00 00 titled Earthwork.

PART 3 - EXECUTION

3.1 LOCATION

A. The location of removals shall be as shown on the drawings either by identifying specified items or by indicating an area within which demolition, removals and abandonments shall be accomplished.

3.2 SURFACE FACILITIES

A. Remove all obstructions including existing fences, debris, asphalt concrete or concrete surfacing such as paving, curbs, gutters, dikes, etc. where so designated on the plans.

3.3 UNDERGROUND FACILITIES

A. Existing abandoned underground structures below new structures or new roadways shall be removed entirely. In all other areas, existing structures or portions of structures below grade shall be removed to a depth of at least 3 feet below finish grade and broken in a manner that will prevent entrapment of water.

B. Existing abandoned pipelines below new structures or new roadways shall be removed entirely. In all other areas, abandoned pipelines within 3 feet of finish grade shall be removed entirely. Existing abandoned pipelines, or portions thereof, 3 feet below finish grade shall be sealed with a 6” minimum thick tight fitting plug of concrete or a tight brick wall not less then 8” thick with cement mortar joints.

C. If asbestos cement pipe is encountered during the course of the work, it shall be properly handled and disposed of offsite in accordance with all applicable laws and regulations dealing with hazardous materials.

3.4 DISPOSAL OF DEMOLISHED OR REMOVED MATERIALS

A. Removed pavements and other asphalt concrete and Portland cement concrete may be used as fill provided it is broken up to meet the size requirements for structural fill in Section 31 00 00 titled Earthwork and is approved by the Geotechnical Engineer. The broken up material shall be mixed with other native and/or imported fill as directed by the Geotechnical Engineer.

B. All other demolished or removed materials not acceptable for use as fill material shall become the property of the Contractor and shall be lawfully disposed of off the project site by the Contractor.

C. Holes resulting from the removal of underground obstructions extending below the proposed finish grade shall be cleared and backfilled with suitable material compacted to the requirements of Section 31 00 00 titled Earthwork.

END OF SECTION

SECTION 02 41 00

SITE PREPARATION & PLANT PROTECTION

PART 1 - GENERAL

1.1 DESCRIPTION

A. Protecting existing trees, electrical equipment, electrical and communication conduits, water lines, irrigation mainline and quick coupling valves, fencing, storm drainage system, sanitary sewer system, utilities, improvements, bleachers, dugouts, paving and vegetation to remain.

B. Removal of, fencing, concrete, asphalt, retaining walls, and other materials.

C. Salvage materials, as noted on the drawings, for reuse as part of the project or for Owner's separate use.

D. Clearing and grubbing.

E. Preserve and protect adjoining properties and school property during removal work, site preparation work and construction.

F. Provide video record of existing storm drainage facilities and utilities within and connected to the area within the limit of work prior to commencing work. Provide record information of existing storm drainage facilities including lines, material, condition, cleanliness, sizes, invert elevations, rim elevations and utilities to remain prior to commencing work.

G. Clean and flush existing storm drainage facilities to remain prior to commencing work.

1.2 RELATED SECTIONS

A. Section 00 31 19 Existing Conditions

B. Section 00 31 32 Geotechnical Data

C. Section 01 11 00 Summary of Work

D. Section 01 50 13 Construction Waste Management

E. Section 01 56 16 Dust Control

F. Section 01 56 19 Noise Control

G. Section 01 71 23 Field Engineering

H. Section 26 00 10 General Electrical Requirements

I. Section 31 00 00 Earthwork

J. Section 31 25 00 Erosion Control

K. Section 32 11 13 Subgrade Preparation and Base Material

L. Section 32 13 13 Landscape Concrete

1.3 QUALITY ASSURANCE

A. Stipulations

1. Plant Protection:

   a. References and Standards: American National Standard for Tree Care Operations; ANSI Z133.1-1988 International Society of Arboriculture I (ISA).

   b. Protect trees against cutting, breaking, skinning and bruising of bark; permit no traffic or stockpiling within drip line.

   c. Do not change earth surface within drip line of trees.

   d. Do not park vehicles or store materials, supplies and construction equipment within drip line of trees.

   e. Install a temporary 6-foot high metal chain link fence at the "drip line" of the tree(s) as directed by the Landscape Architect.

   f. Obtain specific instruction from Landscape Architect for pruning of trees, or disturbance of soil within spread of tree branches and for removal of roots.

   g. Any trenching required within the root zone shall be done by hand and as directed by the Landscape Architect.

   h. Protect existing athletic field. Do not park cars or vehicles, or store materials or equipment on athletic field. Allow school district access to field. Keep field irrigation system fully operable.

2. Plant Replacement

   a. Contractor shall replace any damaged planting in kind using "specimen" plants as follows and at no cost to Owner:

      1) Trees: Any protected trees that perish during construction or lost during the maintenance period, shall be replaced by contractor. Tree value shall be determined by school district using formula adopted by the "Guide For Plant Appraisal", Latest Edition, International Society Of Arboriculture. An International Society of Arboriculture or National Arborist's Association qualified tree surgeon may be retained by the school district to determine the condition of trees in question as to their ability to survive.

      2) Shrubs, 15-gallon can size.

      3) Lawn, sand-based athletic field quality Bayside Blend sod from West Coast Turf.

   b. Coordinate shutoff of irrigation, water, electrical, communication and storm drainage systems with the Owner and be responsible for any damage caused to adjacent landscaping by Contract work.

3. Site Preparation and Demolition

   a. Work shall be executed in accordance with the Drawings and Specifications and includes but is not necessarily limited to the following:

      1) Clearing and grubbing.

      2) Identification and protection of vegetation indicated to remain.

      3) Removal of existing site improvements, such as, paving and bases, concrete curbs, fences, footings, foundations, irrigation system, overhead utilities, underground pipes and utilities and structures.

   b. Locate and identify existing utility services and protect or disconnect, remove and cap as required for new work.

   c. Remove, clean, store and protect all items designated and directed to be salvaged to Owner.

   d. Remove, store and protect all items designated and directed to be reinstalled.

   e. Obtain and pay for permits required for execution of this work.

1.4 SUBMITTALS

A. Photographs or videotape, sufficiently detailed, of existing conditions of adjacent streets, adjacent parking areas, trees and plantings, adjoining construction, and site improvements that might be misconstrued as damage caused by site demolition.

B. Provide video record of existing storm drainage facilities and utilities where noted on drawings prior to commencing work.

C. Provide record drawings of existing storm drainage facilities and utilities to remain prior to commencing work.

1.5 PROJECT CONDITIONS

A. Notify the Underground Service Alert Center (usanorth811.org) 48 hours in advance of performing any excavation work by calling 811.

B. Before proceeding with work, field verify the materials, sizes and elevations of existing storm drainage facilities and utilities to remain and be connected to. Perform specified tree protection work before commencing site preparation, excavation, trenching and construction.

C. Coordination: Coordinate this work with the work of other Sections to avoid delay and interference with other work.

D. Nuisances: Keep dirt, dust, noise and other objectionable nuisance to a minimum. Use temporary enclosures, coverings and sprinkling, and combinations thereof, as necessary to limit dust to lowest practicable level, except do not use water to the extent that it causes flooding or contaminated run-off.

E. Traffic: Conduct work to ensure minimum interference with vehicular and pedestrian traffic, and to permit unencumbered access to the school property located outside of the project areas.

1. Do not close or obstruct streets, sidewalks, or other public passageways without permission from authorities having jurisdiction.

2. If required, by governing authorities, provide alternate routes around closed and obstructed traffic ways.

F. Dispose of cleared, grubbed and removed material that will not be salvaged or recycled on site. Burning on site is prohibited.

G. Salvable Improvements: Carefully remove items indicated to be salvaged and store where designed by Owner. Avoid damaging salvage material. Photograph prior to removal.

H. Protections:

1. Prevent movement and settlement of adjacent structures. Install temporary barriers, fences, guard rails, enclosures, shoring, bracing, planking, warning signs and other protections required to protect structures, utilities, landscaping and other items that are to remain in place.

2. Protect benchmarks, monuments and reference points from displacement and damage; and if displaced or damaged, replace at no cost to the Owner.

3. Install and maintain required bracing, shoring and supports when removing structural elements and be responsible for safety and support of structure. If safety of structure appears to be endangered, cease operations and immediately notify the Owner. Do not resume operations until safety is restored.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Construction/Tree Protection Fence: Minimum of a temporary fence 6-foot high metal chain link fence. Refer to drawings.

B. References and Standards: American National Standard for Tree Care Operations; ANSI Z133.1-1988 International Society of Arboriculture I (ISA).

2.2 SOILS MATERIALS

A. Satisfactory Soil Materials. See Section 31 00 00, Earthwork for satisfactory soil material for backfilling excavations and depressions resulting from site clearing.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas in which work is to be performed. Report in writing to the Owner's Representative all prevailing conditions that will adversely affect satisfactory execution of work. Do not proceed with work until unsatisfactory conditions have been corrected.

B. Starting work constitutes acceptance of the existing conditions and the Contractor shall then, at his expense, be responsible for correcting all unsatisfactory and defective work encountered.

C. For the duration the project, provide a construction fence at the perimeter of project (s) as required to secure the project from trespass and provide a safe construction site. Field verify the perimeter and gate locations with the Construction Manager. The fence location may be adjusted as the project progresses based on the approval of the Construction Manager.

3.2 GEOTECHNICAL REQUIREMENTS

A. Any existing foundations, underground utilities, tree root bulbs, as well as any other site improvements which are to be removed should be cleared from the proposed construction areas. Any below grade obstructions, such as buried tanks or old foundations, should then be removed to their full depth and extent and hauled from the site. The building sites and other improvement areas should then be stripped to a sufficient depth to remove any remaining organic laden topsoil. Any areas of loose or soft materials that are exposed during the grading should also be removed or recompacted, as determined by the geotechnical representative.

B. Holes resulting from the removal of underground obstructions (such as abandoned utilities or tree root bulbs) that extend below the planned finished grade should be cleared of loose soil and debris, then backfilled with suitable material compacted to the requirements for engineered fill.

3.2 CLEARING

A. Prior to commencing work, meet with Owner’s Representative and identify and mark all existing trees that are within the construction zone and are likely to require protection measures as specified herein.

B. Perform work in accordance to applicable section of the standard specifications.

3.3 GRUBBING

A. Remove organic materials and debris. When indicated, such materials as topsoil and leaf mold, or other organic materials above the ground surface suitable for use as mulch or topsoil, shall be salvaged and stockpiled.

B. Grass and their roots: Remove completely. Dispose of at a green waste composting facility.

C. Existing Infield soil in Existing Baseball Bullpens: To the extent practical, strip and reuse existing soil from the existing baseball (not softball) bullpens for the new bullpens. The visitor bullpen is being relocated, so the soil would need to be stripped and stockpiled for reuse. The home bullpen will be renovated in place and expanded.

3.5 UTILITIES

A. Contractor’s attention is directed to Section 8-1.10 “Utility - Non-Highway Facilities”, of the Standard Specifications and these Specifications.

B. Contact local utility companies 48 hours minimum prior to start of demolition work. Confirm verbal notices and written notices. Verify locations of all utilities entering site and their locations on site.

C. Cooperate with the Owner's Representative, utility companies, adjacent property owners, and other building trades in maintaining, protecting, re-routing or extending utilities passing through work areas which serve structures located on project site and on adjacent properties.

D. Verify that utilities that are to be removed, capped or abandoned are turned off, or are disconnected, or are re-routed to new locations before starting demolition.

E. Utilities may be abandoned in place in many cases provided that low strength cement grout completely fills any void in the utility.

3.6 REMOVAL

A. General:

1. Remove materials in an orderly and careful manner.

2. Repair or replace all removal work performed in excess to that required at no cost to the Owner. Repair or replacement shall match and equal construction, condition and finish existing at time of award of Contract.

3. Backfill voids from removed materials with clean fill as defined in Section 31 00 00 Earthwork.

B. Remove following from locations to the extent required or directed for new construction.

1. Clear all structures, concrete slabs, asphalt pavement, over-size debris and organic matter.

2. Fencing, including posts, and footings. Be careful of soil caving.

3. Electric underground wires and conduits occurring within removal areas except those shown as reused or protected on Drawings.

5. Miscellaneous structural elements that interfere with the new construction and as directed.

6. Underground pipes and utilities.

7. Other items noted on the drawings and required to be removed to install the new improvements.

8. Rocks or concrete pieces larger than 6 inches encountered during demolition shall be removed from the site.

9. Natural turf: Remove and dispose of complete, including irrigation system.

C. Cutting asphalt, concrete curbs and concrete pavement:

1. Sawcut paving where required.

2 All lines shall be marked and accepted by Owner's Representative before the cutting operation.

    3. Cut edges of pavement at 90-degree angle to the surface in a true and straight line in accordance with dimensions shown on the Drawings. Make cuts with a concrete saw, to a 1-1/2" minimum depth.

D. Backfill and compact areas excavated and open pits and holes resulting from removal operations. Comply with requirements specified in Section 31 00 00 for backfill materials, compaction and installation methods.

E. Rough grade site within removal areas to meet adjacent contours and to provide positive drainage. Leave site in clean condition acceptable for performance of subsequent construction operations.

3.7 CLEANUP AND DISPOSAL, per General Conditions.

A. Transport trash, rubbish and debris daily from site and legally dispose of:

    1. Demolished and waste materials encountered.

    2. Remove and promptly dispose of contaminated, vermin-infested and dangerous materials encountered.

    3. Do not burn or bury materials on site.

B. Clean excess soil may be distributed on site as accepted by the Geotechnical Engineer, if it does not adversely affect specified finish grades. Coordinate with Section 31 00 00 Earthwork, List of Drawings 00 01 15 and Section 32 11 13 Subgrade Preparation & Base Material.

C. Excess soil may need to be legally disposed of off site. Refer to Section 00 31 19 Existing Conditions. Coordinate with Section 31 00 00 Earthwork, List of Drawings 00 01 15 and Section 32 11 13 Subgrade Preparation & Base Material.

D. Upon completion of work under this Section, remove all tools, equipment and temporary enclosures and structures.

END OF SECTION

SECTION 03 10 00

CONCRETE FORMING AND ACCESSORIES

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes: All labor, materials and equipment and all operations required to complete all formwork as indicated on the drawings; to produce shapes and configurations as shown, as required; and as specified herein, including:

1. Forms, shores, bracing, removal and other operations as necessary for all cast-in-place concrete and masonry placed.
2. Setting and securing anchor bolts and other metal items embedded in concrete into formwork, using materials and layouts furnished and delivered to jobsite as specified under other sections.

B. Related Sections:

1. Pertinent Sections of Division 03 specifying concrete construction.
2. Pertinent Sections of other Divisions specifying work to be embedded in concrete or work penetrating concrete foundations and formwork.

1.2 REFERENCES

A. California Code of Regulations, Title 24, latest adopted edition (herein noted as CBC): Chapter 19A Concrete.

B. American Concrete Institute (ACI) PRC-347 "Guide to Formwork for Concrete".

C. American Plywood Association (APA) “Concrete Forming Guide”.

D. West Coast Lumberman Inspection Bureau (WCLIB) “Standard Grading Rules for West Coast Lumber”.

E. ACI MNL-066 “ACI Detailing Manual”.

F. ACI SPEC-301 “Specifications for Concrete Construction”.

G. Concrete Reinforcing Steel Institute (CRSI) “Manual of Standard Practice”.

1.3 DESIGN REQUIREMENTS

A. Design, engineer, and construct formwork, shoring and bracing to conform to design and code requirements, resist imposed loads; resultant concrete to conform to required shape, line and dimension.

1.4 SUBMITTALS

A. Limitation of review: Structural Engineer's review will be required only where specifically requested for general architectural applications and features only. Contractor is responsible for structural stability, load-resisting characteristics and sufficiency of form work design.

1.5 QUALITY ASSURANCE

A. General: All form materials shall be new at start of work. Produce high quality concrete construction. Minimize defects due to joints, deflection of forms, roughness of forms, nonconforming materials, concrete or workmanship.

B. Reuse of Forms: Plywood forms may be reused, if thoroughly cleaned of all dirt, mortar, and foreign materials, and undamaged at edges and contact face. Reuse shall be subject to permission from the Architect without exception, and issued in writing. Reuse of any panel which will produce a blemish on exposed concrete, will not be permitted.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Form Materials:

1. Non-Exposed Surface Formwork Facing: Forms for concrete which is not exposed to view, may be of plywood as specified for exposed surfaces, or square edge 1x nominal Douglas Fir, Construction Grade, S4S.

2. Exposed Surface Formwork Facing:
   a. Forms for all exterior and interior concrete flat surfaces unless otherwise specified as board formed shall be new Douglas Fir Plywood (APA) ply, 5/8-inch, B-B Plyform, Class 1, Exterior Type, oiled and edged and edge-sealed conforming to U.S. Product Standard PS 1 in large sheet sizes to achieve joint patterns shown.
   b. All exposed concrete edges shall be chamfered 3/4" minimum or as noted on the drawings.

3. Exposed Surface Formwork - Special Pattern Form Liner:
   a. Forms for all exterior and interior concrete flat surfaces indicated shall be as designated by Architect.

B. Earth Forms: Allowed, subject to soil standing in excavations without ravel or caving.

C. Form Release Agent: Spray-on compound, not affecting color, bond or subsequent treatment of concrete surfaces. Maximum VOC content shall comply with local requirements and California Green Building Code.

D. Accessories: Types recommended by manufacturers or referenced standards to suit conditions indicated;

1. Anchors, spacers, void in-fill materials: sized to resist imposed loads.

2. Form Ties: Prefabricated rod, flat band, or wire snap ties with 1" break-back or threaded internal disconnecting type with external holding devices of adequate bearing area. Ties shall permit tightening and spreading of forms and leave no metal closer than 1" to surface.

E. Corner Chamfers and Rustications: Filleted, wood strip or foam type; sizes and shapes as detailed, or 3/4 x 3/4 inch size minimum if not detailed; maximum possible lengths.

F. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete

G. Foam Block Formwork: For use only where specified on drawings to create void space under or within concrete. ASTM D6817. 1 pound per cubic foot maximum density. 10 pounds per square inch minimum compressive strength at 10% deformation. 3.5 pounds per square inch minimum compressive resistance at 1% deformation. 8 pounds per square inch minimum compressive resistance at 5% deformation. InsulFoam Geofoam EPS15, or equivalent.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Inspect the substrate and the conditions under which concrete formwork is to be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected. Commencement of work indicates acceptance of substrates and conditions.

B. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with drawings.

3.2 EARTH FORMS

A. If natural soil or compacted fill can be accurately cut and maintained, foundations and grade beams may be poured against earth without forming. Provide positive protection of trench top corners.

B. Maintain earth forms free of water and foreign materials.

3.3 ERECTION – FORMWORK

A. General: Construct formwork in accordance with calculations, and recommendations of ACI PRC-347. Construct forms to the sizes, shapes, lines and dimensions shown, and as required to obtain accurate alignment, location, grades, level and plumb work in finished structure. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required. Use selected materials to obtain required finishes.

1. Construct cambers specified in concrete members and slabs in the formwork.

2. Schedule the work and notify other trades in ample time so that provisions for their work in the formwork can be made without delaying progress of the project. Install all sleeves, pipes, etc. for building services systems, or other work. Secure information about and provide for all openings, offsets, recessed nailing blocks, channel chases, anchors, ties, inserts, etc. in the formwork before concrete placement.

3. Deflection: Formwork and concrete with excessive deflection after concrete placement will be rejected. Excessive deflection is that which will produce visible and noticeable waves in the finished concrete.

4. Measure formwork for elevated structural slabs, columns, wall elevations points of maximum camber and submit in writing to the Architect/Engineer prior to placing concrete.

B. Formwork Construction: Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI SPEC-301. Uniform, substantial and sufficiently tight to prevent leakage of concrete paste, readily removable without impact, shock or damage to cast-in-place concrete surfaces and adjacent materials. Tie, brace, shore, and support to insure stability against pressures from any source, without failure of any component part and without excessive deflection. Solidly butt joints and provide backup material at joints as required to prevent leakage and fins.

C. Provide all openings, offsets, inserts, anchorages, blocking, and other features of the work as shown or required. See INSERTS, EMBEDDED PARTS, AND OPENINGS for detailed requirements.

D. Warped, checked, or scuffed forms will be rejected.

E. Maintain membranes, reinforcing and other work free of damage; protect with plywood runway boards or other positive, durable means.

F. Align joints and make watertight. Keep form joints to a minimum.

G. Provide fillet and chamfer strips on external corners of exposed locations and as indicated to form patterns in finished work. Extend patterns around corners and into alcoves, on backs of columns and similar locations not otherwise shown.

  1. Produce beveled, smooth, solid, unbroken lines, except as otherwise indicated to conform to patterns.

  2. Form corners and chamfers with 3/4 inch x 3/4 inch strips, unless otherwise indicated, accurately formed and surfaced to produce uniformly straight lines and tight edge joints. Extend terminal edges to required limit and miter chamfer at changes in direction.

H. Unexposed corners may be formed either square or chamfered.

I. Ties and Spreaders: Arrange in a pattern acceptable to the Architect when exposed. Snap-ties may be used except at joints between pours where threaded internal disconnecting type shall be used.

J. Coordinate this section with other sections of work that require attachment of components to formwork.

K. Reglets and Rebates: Accurately locate, size, and form all reglets and rebates required to receive work of other trades, including flashing, frames, and equipment.

3.4 APPLICATION - FORM RELEASE AGENT

A. Apply form release agent on formwork in accordance with manufacturer's recommendations.

B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.

C. Do not allow excess form coating material to accumulate in the forms or to come into contact with reinforcement or surfaces which will be bonded to fresh concrete.

D. Coat steel forms with a non-staining, rust-preventative form oil or otherwise protect against rusting. Rust-stained steel formwork will be rejected.

E. Leave no residue or stain on the face of the concrete, nor affect bonding of subsequent finishes or work specified in other sections.

3.5 INSERTS, EMBEDDED PARTS, AND OPENINGS

A. Provide formed openings where required for items to be embedded in passing through concrete work.

    1. Provide openings in concrete formwork to accommodate work of other sections including those under separate contracts (if any). Size and location of openings, recesses and chases shall be in accordance with the section requiring such items. Accurately place and securely support items to be built into forms.

B. Construction Joints: Construct and locate generally as indicated on Drawings and only at locations approved by Structural Engineer, so as not to impair the strength of the structure. Form keys in all cold joints shown or required.

C. Locate and set in place items that will be cast directly into concrete.

D. Rough Hardware and Miscellaneous Metal: Set inserts, sleeves, bolts, anchors, angles, and other items to be embedded in concrete. Set embedded bolts and sleeves for equipment to template and approved shop drawings prepared by trades supplying equipment.

E. Coordinate with work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other work.

F. Wood Inserts and Nailers: Provide approved preservative-treated lumber. Set all required nailing blocks, grounds, and other inserts as required to produce results shown. Wood plugs shall not be used.

G. Install accessories in accordance with manufacturer's instructions, so they are straight, level, and plumb. Ensure items are not disturbed during concrete placement.

H. Piping: Do not embed piping in structural concrete unless locations specifically approved by Structural Engineer.

I. Conduit: Place conduit below slabs-on-grade and only as specifically detailed on structural drawings. Minimum clear distance between conduits shall be 3 diameters. Location shall be subject to Engineer's written approval and shall not impair the strength of the structure.

J. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.

    1. Provide openings for the introduction of vibrators at intervals necessary for proper placement.

    2. Close temporary openings with tight fitting panels, flush with inside face of forms, and neatly fitted so joints will not be apparent in exposed concrete surfaces.

K. Install Form Liner inserts in accordance with manufacturer's recommendations, to produce patterns and textures indicated.

L. Install waterstops in accordance with manufacturer's recommendations to provide continuous waterproof barrier.

3.6 FORM CLEANING

A. Clean forms as erection proceeds, remove foreign matter within forms.

B. Clean formed cavities of debris prior to placing concrete.

    1. Remove all dirt, chips, sawdust, rubbish, water and foreign materials detrimental to concrete.

2. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.

3.7 FOOTINGS

A. Verify elevations and provide final excavation required for footings prior to placing of concrete.

3.8 SUPPORT STAKES

A. Where required to support formwork, steel stakes located within the concrete placement area shall be sleeved with PVC pipe of as small of size practical to fit the stake. Sleeves shall be filled with grout after removal of stake. Such stakes shall be located no closer than 48 inches on center each way.

B. Wood stakes shall not be used within the area of concrete placement.

3.9 EQUIPMENT BASES

A. Form concrete bases for all mechanical and electrical equipment in accordance with approved shop details furnished by other sections.

B. Sizes and locations as indicated and as required to produce results shown.

C. Provide coved base for all equipment bases placed on concrete slabs.

3.10 FORMWORK TOLERANCES

A. Construct formwork to maintain tolerances required by ACI SPEC-301.

3.11 FOAM BLOCK FORMWORK

A. Blocks shall be placed on prepared leveling course for level bearing. Place adjacent blocks in tight contact together. Where placed in multiple layers, orient long axis of upper layer at 90° to lower layer, and so forth for subsequent layers. Anchor blocks as required to prevent movement prior to and during concrete placement. Do not expose to hydrocarbons, solvents, or coal tar.

3.12 FIELD QUALITY CONTROL

A. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and to verify that supports, fastenings, wedges, ties, and items are secure.

B. Do not reuse wood formwork more than 2 times for concrete surfaces to be exposed to view. Do not patch formwork.

C. Clean and repair surfaces to be re-used in the work. Split, frayed, delaminated or otherwise damaged form facing material will not be acceptable. Apply new form coating compound material to concrete contact surfaces as specified for new formwork.

D. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close all joints. Align and secure joints to avoid offsets.

3.13 FORM REMOVAL

A. Do not loosen or remove forms before minimum curing period has elapsed without employment of appropriate alternate curing methods, approved by the Architect in writing.

B. Remove forms without damage to the concrete using means to insure complete safety of the structure and without damage to exposed beams, columns, wall edges, chamfers and inserts. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.

C. Do not remove forms until the concrete has hardened sufficiently to permit safe removal and the concrete has attained sufficient strength to safely support imposed loads. The minimum elapsed time for removal of forms after concrete has been placed shall be as follows:

  1. Columns and Walls: 7 days, provided members are not subjected to overhead loads.

  2. Retaining Walls: 21 days minimum.

  3. Footings: 7 days minimum. If backfilled immediately, side forms may be removed 24 hours after concrete is placed.

  4. Beams, elevated slab, and similar overhead conditions: 28 days unless adequate shoring is provided.

D. Durations listed above are minimums and are subject to extension at the sole judgment of the Architect/Engineer.

E. Reshoring: Reshore members where and if required by Formwork Design Engineer.

F. Do not subject concrete to superimposed loads (structure or construction) until it has attained full specified design strength, nor for a period of at least 14 days after placing.

G. Store removed forms to prevent damage to form materials or to fresh concrete. Discard damaged forms.

3.14 CLEANING

A. Remove excess material and debris associated with this work from the job site.

END OF SECTION

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SECTION 03 20 00

CONCRETE REINFORCING

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Reinforcing steel work for all concrete and masonry work as indicated on the drawings and specified herein.

2. Coordinate this work with other work affected by these operations, such as forms, electrical work, mechanical work, structural steel, masonry and concrete.

B. Related Sections:

1. Pertinent Sections of Division 01 specifying Quality Control and Testing Laboratory services.

2. Pertinent Sections of Divisions 03 specifying concrete construction.

3. Pertinent Sections of Divisions 04 specifying masonry construction.

4. Pertinent Sections of other Divisions specifying work to be embedded in concrete or work penetrating concrete work.

1.2 REFERENCE STANDARDS

A. California Code of Regulations, Title 24, latest adopted edition (herein noted as CBC) Chapter 19A Concrete.

B. American Concrete Institute (ACI) SPEC-301 “Specifications for Concrete Construction”.

C. ACI CODE-318 “Building Code Requirements for Structural Concrete and Commentary”.

D. ACI MNL-066 “ACI Detailing Manual”.

E. ASTM International (ASTM) A1064 “Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete”.

F. ASTM A615 “Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement”.

G. ASTM A706 “Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement”.

H. American Welding Society (AWS) D1.4 – “Structural Welding Code – Steel Reinforcing Bars”.

I. Concrete Reinforcing Steel Institute (CRSI) “Manual of Standard Practice”.

1.3 SUBMITTALS

A. Submit in accordance with pertinent sections of Division 01 specifying submittal procedures. Submit for review prior to fabrication.

B. Limitation of Review: Structural Engineer's review will be for general conformance with design intent as indicated in the Contract Documents and does not relieve Contractor of full responsibility for conformance with the Contract Documents. The General Contractor shall review and approve shop drawings prior to submittal to the Architect/Engineer.

C. Shop Drawings: Show complete fabrication and placing details of all reinforcing steel. Comply with requirements of ACI MNL-66. Include:

   1. Bar sizes and schedules;

   2. Shapes of bent bars, layout and spacing of bars, location of splices.

   3. Stirrup spacing, arrangements and assemblies.

   4. References to Contract Document detail numbers and designations.

   5. Wall elevations corresponding to elevations shown in Contract Documents.

D. Product Data: Submit manufacturer's product data, specifications, location and installation instructions for proprietary materials and reinforcement accessories. Provide samples of these items upon request.

E. Certificates: Submit all certifications of physical and chemical properties of steel for each heat number as manufactured, including location of material in structure as specified below in Article titled QUALITY ASSURANCE. All materials supplied shall be tagged with heat numbers matching submitted Mill Test Report analyses.

F. Samples: Provide to the Owner's Testing laboratory as specified in Article SOURCE QUALITY CONTROL.

1.4 QUALITY ASSURANCE

A. Perform work of this Section in accordance with CRSI DA4, CRSI P1, ACI SPEC-301, and ACI CODE-318.

B. Requirements of Regulatory Agencies, refer to pertinent Sections of Division 01 and CBC.

C. Certification and Identification of Materials and Uses: Provide Owner's Testing Agency with access to fabrication plant to facilitate inspection of reinforcement. Provide notification of commencement and duration of shop fabrication in sufficient time to allow inspection and all material identification/test information listed below.

   1. Provide manufacturer's Mill Test Reports for all materials. Include chemical and physical properties of the material for each heat number manufactured. Tag all fabricated materials with heat number.

   2. Provide letter certifying all materials supplied are from heat numbers covered by supplied mill certificates. Include in letter the physical location of each grade of reinforcing and/or heat number in the project (i.e. foundations, walls, etc.).

   3. Unidentified Material Tests: Where identification of materials by heat number to mill tests cannot be made, Owner's Testing Agency shall test unidentified materials as described below.

D. Testing and Inspection: Tests and Inspections required by Independent Testing Agency are specified below in Articles SOURCE QUALITY CONTROL and FIELD QUALITY CONTROL. Duties and limitations of Independent Testing Agency, test costs and test reports in conformance with pertinent Sections of Division 01.

1.5 DELIVERY, STORAGE AND HANDLING

A. Comply with pertinent requirements of Division 01.

B. Deliver reinforcement to project site in bundles marked with durable tags indicating heat number, mill, bar size and length, proposed location in the structure and other information corresponding with markings shown on placement diagrams.

C. Handle and store materials above ground to prevent damage, contamination or accumulation of dirt or rust.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Reinforcing Steel: Deformed billet steel bars, ASTM A706 Grade 60 or ASTM A615 Grade 60.

1. Welded reinforcement shall be ASTM A706, or A615 meeting carbon requirements of AWS D1.4. Welding shall conform with AWS D1.4.

2. All reinforcement to be unfinished.

3. ASTM A615 reinforcement at special structural concrete walls, concrete coupling beams, and special concrete moment frames shall have maximum yield stress of 78,000 psi and the tensile strength shall be greater than 125% of the actual yield strength. Test ASTM A615 reinforcement for conformance to these criteria prior to fabrication and/or installation.

B. Welded Wire Reinforcement: ASTM A1064.

C. Tie Wire: No. 16 AWG or heavier, black annealed.

D. Concrete Blocks: On-grade conditions only, as required to support reinforcing bars in position.

E. Reinforcing Supports: Plastic or galvanized steel chairs, bolsters, bar supports, or spacers sized and shaped for adequate support of reinforcement and construction loads imposed during concrete placement, meeting ACI and CRSI standards.

1. For use over formwork: Galvanized wire bar type supports complying with CRSI recommendations. Provide plastic tips where exposed to view or weather after removal of formwork. Do not use wood, brick, or other unacceptable materials.

F. Reinforcement Splice Couplers: For use only where specified on drawings. Submit other locations proposed for use to Engineer for review. "L-Series Bar Lock" Coupler Systems for Splicing Reinforcement Bars, UES ER-0319, by Dayton-Superior Corporation.

2.2 FABRICATION

A. Fabricate concrete reinforcing in accordance with CRSI (DA4), unless specifically shown otherwise. Details not specifically shown or indicated shall conform to SP-066 and specified codes and standards.

1. Accurately shop-fabricate to shapes, bends, sizes, gauges and lengths indicated or otherwise required.

2. Bend bars once only. Discard bars improperly bent due to fabricating or other errors and provide new material; do not re-bend or straighten unless specifically indicated. Rebending of reinforcement in the field is not allowed.

3. Do not bend reinforcement in a manner that will injure or weaken the material or the embedding concrete.

4. Do not heat reinforcement for bending. Heat-bent materials will be rejected.

B. Unacceptable materials: Reinforcement with any of the following defects will not be permitted in the work.

1. Bar lengths, depths and bends exceeding specified fabrication tolerances.

2. Bends or kinks not indicated on Drawings or final shop drawings.

3. Bars with reduced cross-section due to rusting or other cause.

C. Tag reinforcement with durable identification to facilitate sorting and placing.

D. Shop Fusion Welded Stirrup/Tie/Spiral Cages

1. Shop fusion welding of stirrup/tie/spiral cages is permitted to aid in fabrication and handling. The following requirements shall be met.

2. All reinforcing bars receiving weld shall be ASTM A706.

3. Longitudinal holding wires shall be ASTM A1064.

4. Shop welding shall be performed by machines under a continuous, controlled process.

5. Quality control tests shall be performed on shop-welded specimens and the test results shall be available, upon request, to the Architect/Engineer.

6. Tack welding of reinforcing steel is not permitted.

7. Welding of any type shall not occur at 90°, 135°, or 180° bends. Circular ties and spirals may be shop fusion welded outside of areas with 90°, 135°, or 180° hook bends.

8. Longitudinal bars shall not be welded to stirrups/ties/spirals.

2.3 SOURCE QUALITY CONTROL

A. The Testing Agency, as specified in the Article QUALITY ASSURANCE, will perform the following:

1. Sampling and Tests of Reinforcing Bars per CBC 1910A.2.

2. Material Testing:
    a. Identified Steel: When samples are taken from bundled steel identified by heat number, matched with accompanying mill analyses as delivered from the mill, Owner's Testing Agency will perform one tensile test and

one bend test per each ten tons or fraction thereof for each required size of reinforcing steel.

b. Unidentified Steel: When identification of materials by heat number matched to accompanying mill analyses cannot be made, perform one tensile test and one bend test per each two and one-half tons or fraction thereof for each required size of reinforcing steel. Tests of unidentified steel shall be performed by the Owner's Testing Agency and costs for these tests shall be paid by the Contractor by deductive change order.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Inspect the conditions under which concrete reinforcement is to be placed. Do not proceed with the work until unsatisfactory conditions have been corrected.

B. Coordinate with work of other sections to avoid conflicts or interference. Bring conflicts between reinforcement and other elements to Architect's attention. Resolve conflicts before concrete is placed.

C. Notify Architect, Structural Engineer, and Authority Having Jurisdiction for review of steel placement not less than 48 hours before placing concrete.

3.2 PLACEMENT

A. General: Comply with the specified codes and standards, and Concrete Reinforcing Steel Institute recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.

B. Clean bars free of substances which are detrimental to bonding. Maintain reinforcement clean until embedded in concrete.

C. Place reinforcement to obtain the minimum coverages for concrete protection. Do not deviate from required position. Maintain required distance, spacing and clearance between bars, forms, and ground.

D. Location and Support: Provide metal chairs, runners, bolsters, spacers and hangers, as required.

E. Provide additional steel reinforcement as necessary or as directed, to act as spreaders or separators to maintain proper positioning.

F. Tying and Attachment: Securely tie at all intersections and supports with wire. Prevent dislocation or movement during placement of concrete. Direct twisted ends of wire ties away from exposed concrete surfaces.

G. Separate reinforcing from pipes or conduits with approved non-metallic separators. Do not use wood or steel form stakes or reinforcement used as stakes as support for reinforcement.

H. Accommodate placement of formed openings required by other sections.

I. Obstructions:

1. Where obstructions, block-outs, or penetrations (conduits, raceways, ductwork) prevent continuous placement of reinforcement as indicated, provide additional reinforcing as detailed and as directed by the Structural Engineer to supplement the indicated reinforcement around the obstruction.

2. Place additional trim bars, ties, stirrups, or other elements as detailed and as directed at all opening, sleeves, pipes or other penetrations through structural elements.

J. Welded Wire Reinforcement: Reinforce slabs with 6"x 6"-W1.4 x W1.4 welded wire reinforcement reinforcing, unless otherwise noted on drawings.

1. Provide flat sheets only, no rolls. Straighten, cut to required size, and lay out flat in place.

2. Securely wire-tie reinforcement to other reinforcement at frequent intervals.

3. Extend reinforcement over supporting beams and walls, and to within 1 inch of edge of slabs, construction joints, and expansion joints.

4. Support reinforcement in mid-depth of slab.

5. Lift reinforcement at intervals as slab concrete is placed, ensure proper embedment

3.3 REINFORCING SPACING AND COVERAGE

A. Spacing: Do not space bars closer than four (4) diameters of the largest of two adjacent bars, except at bar laps, which shall be placed such that a minimum of 2 bar diameters is clear between bars.

B. Where reinforcing in members is placed in two layers, the distance between layers shall not be less than four bar diameters of the largest bar and the bars in the upper layers shall be placed directly above those in the bottom layer, unless otherwise detailed or dimensioned.

C. Coverage of bars (including stirrups and columns ties) shall be as follows, unless otherwise shown:

1. Footings and Mat Foundation: 3 inches to any soil face, 2 inches to top.

2. Slabs (on grade): 2 inches to grade face, 1-1/2 inches to top face.

3. Slabs (elevated): 1-1/2 inches top and bottom.

4. Beam & Column: 1-1/2inches to form.

5. Walls: 1-1/2 inches clear to form and 2 inches clear to form at soil face.

3.4 DOWELS, SPLICES, OFFSETS AND BENDS

A. Provide standard reinforcement splices at splices, corners, and intersections by lapping ends, placing bars in contact, and tightly tying with wire at each end. Comply with details shown on structural drawings and requirements of ACI CODE-318.

B. Provide minimum 1-1/2 inch clearance between sets of splices. Stagger splices in horizontal bars so that adjacent splices will be 4 feet apart.

C. Laps of welded wire reinforcement shall be at least two times the spacing of the members in the direction lapped but not less than twelve inches.

D. Splices of reinforcement shall not be made at points of maximum stress. Provide splice lengths as noted on the structural drawings, with sufficient lap to transfer the stress between bars by bond and shear.

E. Spacing:

1. Space bars minimum distance specified and all lapped bars 2 bar diameters (minimum) clear of the next bar.

2. Stagger splices of adjacent bars where possible and where required to maintain bar clearance.

3. Beam or slab top bars shall be spliced mid-span of column support and bottom bars spliced at column supports.

4. Request Architect/Engineer review prior to placement for all splices not shown on the drawings.

F. Reinforcement Couplers: Install at all locations indicated. Install couplers in accordance with manufacturer's recommendations.

3.5 WELDING

A. No reinforcing shall be welded unless specifically indicated. No reinforcing shall be welded without prior approval of the Structural Engineer and the Authority Having Jurisdiction.

B. Only when so approved for use as noted above, all welding shall conform to AWS D1.4, ACI CODE-318, and CBC 1903A.8 and the following;

1. All welding performed by certified welders.

2. All reinforcement requires preheat prior to welding. All preheat and welding shall be continuously inspected by the Testing Agency.

3.6 MISPLACED REINFORCEMENT

A. Notify Architect/Engineer immediately if reinforcing bars are known to be misplaced after concrete has been placed.

B. Perform no correction or cutting without specific direction. Do not bend or kink misplaced bars.

C. Correct misplaced reinforcing only as directed in writing by the Architect/Engineer. Bear all costs of redesign, new, or additional reinforcing required because of misplaced bars at Contractor's expense.

3.7 FIELD QUALITY CONTROL

A. The Testing Agency as specified in the Article QUALITY ASSURANCE, will inspect the work for conformance to contract documents before concrete placement.

1. Inspection: Provide inspection and verification of installed reinforcement. Confirm that the surface of the rebar is free of form release oil or other coatings.

2. Inspect all preheat and welding activities for steel reinforcement, when these occur.

3. Exception: Non-structural patios, driveways, and sidewalks do not require special inspection.

3.8 CLEANING

A. Remove excess material and debris associated with this work from the job site.

END OF SECTION

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes: Provide all labor, materials, equipment and services to complete all concrete work required, including, but not limited to, the following:

  1. Foundations, beams, columns, elevated slabs, slabs-on-ground, walls, and retaining walls.

  2. Installation of all bolts, inserts, sleeves, connections, etc. in the concrete.

  3. Joint devices associated with concrete work.

  4. Miscellaneous concrete elements, including, but not limited to: equipment pads, light pole bases, flagpole bases, thrust blocks, and manholes.

  5. Concrete curing.

  6. Coordination with other sections:
     a. Make all preparations and do all work necessary to receive or adjoin other work. Install all bolts and anchors, including those furnished by other sections, into formwork and provide all required blocking.
     b. Install all accessories embedded in the concrete and provide all holes, blockouts and similar provisions necessary for the work of other sections. Provide all patching or cutting made necessary by failure or delay in complying with this requirement at the Contractor's expense.
     c. Coordinate with other sections for the accurate location of embedded accessories.

B. Related Sections:

  1. Pertinent Sections of Division 01 specifying Quality Control and Testing Laboratory services.

  2. Pertinent Sections of Division 03 specifying concrete construction.

  3. Pertinent Sections of other Divisions specifying work to be embedded in concrete or work penetrating concrete.

  4. Pertinent sections of other Divisions specifying floor finishes and sealants applied to concrete substrates.

1.2 REFERENCES

A. California Code of Regulations, Title 24, latest adopted edition (herein noted as CBC) Chapter 19A Concrete.

B. American Concrete Institute (ACI) PRC-211.1 “Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete”

C. ACI PRC-213 “Guide for Structural Lightweight-Aggregate Concrete”.

D. ACI SPEC-301 “Specifications for Concrete Construction”.

E. ACI PRC-302.1 “Guide for Concrete Floor and Slab Construction”.

F. ACI PRC-304 “Guide for Measuring, Mixing, Transporting, and Placing Concrete”.

G. ACI PRC-305.1 “Specification for Hot Weather Concreting”.

H. ACI PRC-306.1 “Standard Specification for Cold Weather Concreting”.

I. ACI SPEC-308.1 “Specification for Curing Concrete”.

J. ACI CODE-318 “Building Code Requirements for Structural Concrete and Commentary”.

1.3 SUBMITTALS

A. Submit in accordance with pertinent sections of Division 01 specifying submittal procedures. The General Contractor shall review and approve shop drawings prior to submittal to the Architect/Engineer. Submittals that do not meet these requirements will be returned for correction without review. Submit for review prior to fabrication.

B. Limitation of Review: Structural Engineer's review will be for general conformance with design intent as indicated in the Contract Documents and does not relieve Contractor of full responsibility for conformance with the Contract Documents.

C. Product Data: Submit manufacturers' data on manufactured products and other concrete related materials such as bond breakers, cure/sealer, admixtures, etc. Demonstrate compliance with specified characteristics. Provide samples of items upon request. Submit material certificates for concrete aggregates and cementitious materials. Certificates shall show compliance to applicable ASTM’s, the CBC, and additional requirements stated herein.

D. Mix Designs: Submit Mix Designs for each structural concrete type required for work per requirements of articles CONCRETE MIXES and QUALITY ASSURANCE. Resubmit revised designs for review if original designs are adjusted or changed for any reason. Non-Structural mixes need not be submitted for review by Structural Engineer.

E. Shop Drawings: Proposed location of construction and cold joints. Proposed location of all slab construction/dowel joints, control joints, and blockouts.

F. Manufacturer's Installation Instructions: Indicate installation procedures and interface required with adjacent construction for concrete accessories.

G. Batch Plant Ticket: Include with delivery of each load of concrete. Provide ticket to the Testing Agency and the Architect/Engineer as separate submittals. Concrete delivered to the site without such ticket shall be rejected and returned to the plant. Each ticket shall include all information specified in Article SOURCE QUALITY CONTROL below.

H. Engineering Analysis: Prepared by a California-licensed Civil or Structural Engineer, justifying construction-imposed loads on slabs, beams, and walls which exceed those allowed by CBC for the specified use.

1. 2000 lbs maximum allowable construction load without analysis.

2. 10,000 lbs maximum allowable construction load with analysis.

I. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.

1.4 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI SPEC-301 and ACI CODE-318.

B. Concrete construction verification and inspection to conform to CBC 1705A.3.

C. Common Sourcing: Provide each of the following materials from consistent sources for entire project.

1. Cement.
2. Fly ash.
3. Aggregate.
4. Slag Cement.

D. Follow requirements of ACI SPEC-305.1 when concreting during hot weather. Follow requirements of ACI SPEC-306.1 when concreting during cold weather.

E. Services by the Independent Testing Agency (includes "Special" Inspections) as specified in this Section and as follows:

1. Perform tests and inspections specified below in articles SOURCE QUALITY CONTROL and FIELD QUALITY CONTROL. Duties and limitations of Independent Testing Agency, test costs and reports to be in conformance with pertinent Sections of Division 01.

F. Contractor shall bear the entire cost of remediation, removal, and/or replacement of concrete determined defective or non-conforming, including Architect/Engineer fees for redesign.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Materials specified by brand name shall be delivered in unbroken packages bearing manufacturer's label and shall be brand specified or an approved equal.

B. Delivery, Handling and Storage of other materials shall conform to the applicable sections of the current editions of the various reference standards listed in this Section.

C. Protect materials from weather or other damage. Sort to prevent inclusion of foreign materials.

D. Specific Requirements:

1. Cement: Protect against dampness, contamination, and warehouse set. Store in weather tight enclosures.
2. Aggregates: Prevent excessive segregation, or contamination with other materials or other sizes of aggregates. Use only one supply source for each aggregate stock pile.
3. Admixtures:
    a. Store to prevent contamination, evaporation, or damage.

        b. Protect liquid admixtures from freezing and extreme temperature ranges.
        c. Agitate emulsions prior to use.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Cold Weather (Freezing or near-freezing temperatures) per ACI SPEC-306.1:

    1. Heat concrete materials before mixing, as necessary to deposit concrete at a temperature of at least 50°F but not more than 90°F.

    2. Do not place concrete during freezing, near-freezing weather, snow, rain or sleet unless protection from moisture and/or cold is provided.

    3. Protect from freezing and maintain at a temperature of at least 50°F for not less than seven days after placing. Take special precautions to protect transit-mixed concrete.

    4. No salts, chemical protection or admixture are permitted without written approval of Architect/Engineer.

    5. Contractor shall maintain an air temperature log for the first 7 days after placement with entry intervals not to exceed 8 hours.

B. Hot Weather per ACI SPEC-305.1:

    1. Cool concrete materials before mixing, or add ice in lieu of mix water as necessary to deposit concrete at a temperature below 85°F.

    2. Do not place concrete in hot/windy weather without Architect/ Engineer review of procedures.

    3. Provide sunshades and/or wind breakers to protect concrete during finishing and immediate curing operations. Do not place concrete at air temperature exceeding 90°F.

    4. Provide modified mix designs, adding retarders to improve initial set times and applying evaporation reducers during hot/windy weather for review by Independent Testing Agency prior to use.

1.7 MOCK-UP

A. Construct and erect mock-up panel for architectural concrete surfaces indicated to receive special treatment or finish, as result of formwork.

    1. Panel Size: Sufficient to illustrate full range of treatment.

    2. Number of Panels: 2.

    3. Locate as indicated on drawings.

B. If requested by Architect / Engineer, cast concrete against mock-up panel. Obtain acceptance of resulting surface finish prior to erecting formwork.

C. Accepted mock-up panel is considered basis of quality for the finished work. Keep mock-up exposed to view for duration of concrete work.

D. Mock-up may remain as part of the Work.

1.8 SCHEDULING AND SEQUENCING

A. Organize the work and employ shop and field crew(s) of sufficient size to minimize inspections by the Testing Agency.

B. Provide schedule and sequence information to Testing Agency in writing upon request. Update information as work progresses.

PART 2 – PRODUCTS

2.1 FORMWORK

A. Comply with requirements of Section 03 1000.

2.2 REINFORCEMENT

A. Comply with requirements of Section 03 2000.

2.3 MATERIALS

A. General Requirements: All materials shall be new and best of their class or kind. All materials found defective, unsuitable, or not as specified, will be condemned and promptly removed from the premises.

B. Cementitious Materials:

1. Portland Cement: ASTM C150, Type II, low alkali.

2. Fly Ash (Pozzolan): ASTM C618, Class F.

3. Slag Cement: ASTM C989, Grade 100 or 120.

C. Concrete Aggregates:

1. Coarse and Fine Aggregates: ASTM C33; Stone aggregate and sand. Specific source aggregate and/or sand or shrinkage characteristics as required for class of concrete specified.

2. Lightweight aggregate: ASTM C330 and C332.

3. Source shall remain constant throughout the duration of the job. The exact portions of the fine aggregates and coarse aggregates to be used in the mix shall be determined by the mix design.

4. Aggregates shall be tested for alkali reactivity per CBC section 1903A.5. Where test results exceed allowable limits, additional testing of mitigation procedures shall be provided, as outlined per CBC section 1903A.5.

D. Water: ASTM C1602. Potable, clean, from domestic source.

E. Admixtures: All admixtures shall be used in strict accordance with the manufacturer's recommendations. Admixtures containing calcium chlorides or other accelerators shall not be used without the approval of the Architect/Engineer and the Owner's Testing Laboratory.

1. Normal or Mid-Range Water Reducing Admixtures: ASTM C494 Type A, “MasterPozzolith” series or "MasterPolyheed" series by Master Builders Solutions, "WRDA" series by W.R. Grace, or equal.

2. Water Reducing Admixture and Retarder: ASTM C494 Type B or D, "MasterSet R" series or “MasterSet DELVO” series by Master Builders Solutions, "Plastiflow-R" by Nox-crete, or equal.

3. High Range Water-Reducing Admixtures: ASTM C494 Type F, "MasterRheoBuild 1000" or “MasterGlenium” series by Master Builders Solutions or equal.

4. Air Entraining Admixtures: ASTM C260, “MasterAir” series by Master Builders Solutions or equal.

5. Viscosity Modifiers: ASTM C494 Type S. “MasterMatrix VMA” series by master Builders Solution or equal.

F. Slurry: Same proportion of cement to fine aggregates used in the regular concrete mix (i.e. only coarse aggregate omitted); well mixed with water to produce a thick consistency.

G. High Strength Grout: See section 05 1200 or 05 1100 for requirements.

H. Dry Pack: Dry pack (used only for cosmetic concrete repairs) shall consist of:

1. One part cement to 2-1/2 parts fine aggregate (screen out all materials retained on No.4 sieve), mixed with a minimum amount of water, added in small amounts.

2. Mix to consistency such that a ball of the mixture compressed in the hand will retain its shape, showing finger marks, but without showing any surface water.

2.4 ACCESSORIES

A. Bonding Agent: ASTM C881, Type II Grade 2 Class B or C. Do not allow epoxy to set before placing fresh concrete.

1. “MasterEmaco ADH 326” by Master Builders Solutions;

2. “Rezi-Weld 1000” by W.R. Meadows.

B. Chemical Hardener: Fluorosilicate solution designed for densification of cured concrete slabs. “MasterKure HD 300 WB” by Master Builders Solutions, "LIQUI-HARD" W.R. Meadows Co, or equal.

C. Moisture-Retaining Cover: ASTM C171, type 1, one of the following;

1. Regular Curing Paper, Type I, reinforced waterproof: Fortifiber Corporation "Orange Label Sisalkraft", "Pabcotite" paper, or equal.

2. Polyethylene Film: ASTM D 2103, 4 mil thick, clear or white color.

3. White-burlap-polyethylene sheet, weighing not less than 10 oz/per linear yd.

D. Liquid Curing Compound: ASTM C 309, Type 1, Class B, clear or translucent, 25% minimum solids, water base acrylic cure/sealer which will not discolor concrete and compatible with bonding of finishes specified in related sections. W.R. Meadows Co.

"Vocomp 25" or equal. Maximum VOC content shall comply with local requirements and California Green Building Code.

E. Under Slab Water Vapor Retarder: Vapor retarder sheet to be ASTM E1745 Class A; 15 mil, single ply extruded polyolefin; permeance no greater than 0.01 U.S. Perms per ASTM E154, ASTM E96 procedure B or ASTM F1249.

  1. "Stego Wrap Vapor Barrier (15mil)" by Stego Industries LLC.

  2. "Vaporguard" by Reef Industries.

  3. Approved Equal.

F. Evaporation Reducer: "MasterKure ER 50" by Master Builders Solutions.

G. Permeability Reducer: Use only where specifically referred to.

  1. ASTM C494 Type S.

  2. Admixture Type: Xypex Chemical Corporation "XYPEX Admix C-500" or Master Builders Solutions "MasterLife 300" series. Dosage: per manufacturer.

  3. Surface-Applied Type: Xypex Chemical Corporation "XYPEX Concentrate. Brush application: 1.25-1.50lb/sq. yd., 5 parts powder to 2 parts water. Master Builders Solutions "MasterSeal 500". Slurry coat: one part water to 2.25-2.5 parts powder by volume.

  4. Approved equal.

2.5 JOINT DEVICES AND MATERIALS

A. Waterstops: Resilient type, meeting Corps of Engineers CRD-C 572. Consult manufacturer for appropriate product for specific use. Submit for review. Install per manufacturers recommendation. Provide W. R. Meadows "Seal Tight" PVC waterstop, Sika "Greenstreak" PVC waterstop, or approved equal.

B. Expansion Joint Filler: ASTM D1751, Nonextruding, resilient asphalt impregnated fiberboard or felt, 3/8 inch thick and 4 inches deep; tongue and groove profile.

  1. Products: "Serviced Products", W.R. Meadows, Inc., "National Expansion Joint Company", "Celotex Corporation", or equal.

C. Joint Filler: ASTM D944, Compressible asphalt mastic with felt facers, 1/4 inch thick and 4 inches deep.

D. Sealant and Primer: As specified in Section 07 9000.

E. Slab Joint Sealant: Compatible with floor finishes specified in related sections.

2.6 CONCRETE MIXES

A. General requirements for mix design and submittal of structural class concrete:

  1. Provide Contractor submittals to Architect/Engineer not less than 15 days before placing concrete.

2. Contractor shall review mix designs and proposed placing requirements prior to submittal for compatibility to ensure that the concrete as designed can be placed in accordance with the drawings and specifications.
3. Changes or revisions require re-submittal: All variations to approved mix designs, including changing type and/or quantity of admixtures shall be resubmitted to the Architect/Engineer for review prior to use.

4. Mix design(s) for all structural classes of concrete to be prepared by qualified person experienced in mix design. Allow for time necessary to do trial batch testing when required.

5. Preparer to provide backup data and certify in writing that mix design meets:
   a. Requirements of the specifications for concrete durability and quality;
   b. Requirements of the California Building Code and ACI CODE-318, including break histories, trial batching test results, and/or a mix designed by a California Registered Civil Engineer per ACI CODE-318 and bearing the Engineer's seal & signature.

6. Clearly note on mix designs with specified maximum W/CM if design permits addition of water on site, or clearly identify in the mix design that no water is to be added on site.

7. Deviations: Clearly indicate proposed deviations, and provide written explanation explaining how the deviating mix design(s) will provide equivalent or better concrete product(s) than those specified.

8. Include adjustments to reviewed mix designs to account for weather conditions and similar factors.

B. Proportioning - General: The following provisions apply to all mix designs:

1. Proportion concrete mixes to produce concrete of required average strength (as defined by ACI CODE-318). Select slump, aggregate sizes, shrinkage, and consistency that will allow thorough compaction without excessive puddling, spading, or vibration, and without permitting the materials to segregate, or allow free water to collect on the surface.

2. Select aggregate size and type to produce dense, uniform concrete with low to moderate shrinkage, free from rock pockets, honeycomb and other irregularities.

3. Mix designs may include water reducing and retarding admixtures to meet or exceed minimum set times (time required to place and finish) and to minimize Water-Cementitious Materials Ratios (W/CM). Minimum and maximum criteria presented in this section are guidelines and do not represent a specific mix design.

4. Cement Content: Minimum cement content indicates minimum sacks of cementitious material. Increasing cement content to increase early strengths or to achieve specified W/CM while maintaining water content is discouraged in order to minimize effects of shrinkage.
   a. Substitution of fly ash for Portland cement on an equivalent weight basis up to 25% replacement is permitted, except at high early strength concrete. Replacement in excess of 25% is not permitted unless part of a specified mix design that has been submitted for review.

   b. Substitution of slag cement for Portland cement on an equivalent weight basis up to 45% replacement is permitted, except at high early strength concrete. Replacement in excess of 45% is not permitted unless part of a specified mix design that has been submitted for review.
   c. Such substitution requests may be denied by the Engineer.

5. Water Content: Mix designs with a specified maximum W/CM may be designed with a lower W/CM than specified in order to allow addition of water at the site.

6. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI SPEC-301 and this section.
   a. For trial mixtures method, employ independent testing agency acceptable to Architect/Engineer for preparing and reporting proposed mix designs.
   b. Per DSA IR19-3, trial batching or historic breaks shall be used where fly ash substitution for cement is greater than 15%.

7. Placement Options: Mix designs may, at the Contractor's option, be designed for either pump or conventional placement with aggregate size, slumps, etc. to be maintained as specified in this section.

C. Proportioning Normal Weight Concrete: Comply with ACI PRC-211.1 recommendations and this section.

D. Proportioning Structural Light Weight Concrete: Comply with ACI PRC-213 recommendations and this section. Maximum cured weight of light weight concrete shall be 120 pounds per cubic feet. General Contractor is responsible for coordinating and providing light weight concrete density to meet the required fire assembly rating of the Construction Documents at the concrete depths provided in the structural drawings. General Contractor to notify the Structural Engineer for review if light weight concrete of the required density for the specified fire assembly rating cannot be sourced.

E. Special mix design requirements for interior concrete floor slabs on ground:

1. Proportion concrete mixes per this specification, ACI PRC-211.1, and the requirements below:

2. Fly Ash shall be substituted for cement on a 1 lb. per 1 lb. basis, with a minimum replacement of 25% and a maximum of 35%. Alternatively, Slag Cement, shall be substituted for cement on a 1 lb. per 1 lb. basis, with a minimum replacement of 30% and a maximum of 45%.

3. 200 lbs. of 3/8(-) aggregate shall be added to reduce total sand.

4. Reduce total sand to minimum practical.

5. Admixture dosage shall be per manufacturer’s recommendations. Dosage may be increased for workability as long as set times are not excessive for placement and finishing.

F. Special mix design requirements for high volume fly ash concrete:

1. Proportion concrete mixes per this specification, ACI PRC-211.1, and the requirements below:

2. Fly Ash shall be substituted for cement on a 1 lb. per 1 lb. basis, with a replacement of 50%.

3. Minimum strength at 28 days to be 2500 psi; minimum strength at 56 days to be 3000 psi.

4. Add 200-300 pounds 3/8” aggregate to replace portion of fine aggregate.

5. Admixture dosage shall be per manufacturer’s recommendations. Dosage may be increased for workability as long as set times are not excessive for placement and finishing.

6. Concrete shall be wet cured per CONCRETE CURING.

G. Mix Design Minimum Requirements:

Concrete Class	Coarse Aggregate Size (Inches) & Fine Aggregate[3]	Maximum W/CM or Maximum Nominal Slump & Tolerance (Inches)[1,2]	Minimum 28-Day Design Strength	Minimum Cement Sacks/per yd[4]
NON-STRUCTURAL				
1) Slab on Ground Exterior (Walks & Patios)	1" x #4	W/CM = .55	2,500	4.5
STRUCTURAL				
2) Foundation (including stem walls)	1" x #4	W/CM = .45	4,500	5.0
3) Walls, Retaining Walls & Beams	1" x #4	W/CM = .45	4,500	5.0
4) Drilled Pier	3/4” x #4	W/CM = .45	4,500	5.0

1. The tolerance is the maximum deviation allowable without rejection. The mix design shall be based on the nominal value specified and is without water reducing mixtures. Slump to be measured at the end of the hose.

2. The maximum W/CM is limited at time of placement as noted. No water is to be added on site such that the specified W/CM or maximum slump is exceeded without approval of the testing laboratory and the Architect/Engineer. Workability is to be achieved utilizing an acceptable mid-range to high range water reducing admixture.

3. Gradation of aggregate is per ACI CODE-318 and ASTM C33.

4. Minimum cement content includes all cementitious materials.

5. See Article 2.6E for additional requirements at slabs on ground.

6. See article 2.6F for additional requirements at high volume fly ash concrete.

2.7 MIXING CONCRETE

A. Batch final proportions in accordance with approved mix designs. All adjustments to approved proportions, for whatever reason, shall be reviewed by the Architect/Engineer prior to use.

B. Batch and mix concrete in accordance with ASTM C94, at an established plant. Site mixed concrete will be rejected.

C. Provide batch and transit equipment adequate for the work. Operate as necessary to provide concrete complying with specified requirements.

D. Place mixed concrete in forms within 1-1/2 hours from the time of introduction of cement and water into mixer or 300 revolutions of the drum whichever comes first. Use of, re-mixing, and/or tempering mixed concrete older than 1 hour will not be permitted.

E. Do not add water at the site to concrete mixes with a maximum specified W/CM unless the water content at batch time provides for a W/CM less than specified and this provision, including the quantity of water which may be added at the site, is specifically noted on the mix design and certification by the mix preparer. See ASTM C94 for additional requirements.

2.8 SOURCE QUALITY CONTROL

A. Services by independent Testing Agency:

1. Where aggregate alkali reactivity testing (and, when applicable, mitigation testing) per the MATERIALS section is not available, the Testing Agency shall perform this testing to verify materials conformance to CBC section 1903A.5.

2. Batch Plant inspection at automated plants to occur at commencement of concrete work each day (first truck). Batch Plant inspection at non-automated plants and when accuracy is questionable shall be continuous. Additionally, water cement ratio (WCR) is to be verified where a WCR is specified herein. The computed WCR is to be written on the Batch Plant Certificate to be taken to the job site prior to the truck leaving the plant. See requirements of CBC 1705A.3.3.

3. Batch Plant Certificates: Obtain the weighmaster's Batch Plant Certificate at arrival of truck at the site. If no batch plant certificate is provided, recommend to the General Contractor that the truckload of concrete be rejected. So note in daily log, along with the location of the load of concrete in the structure if the load is not rejected. See requirements of CBC 1705A.3.3.
    a. Laboratory's inspector shall obtain for each transit mixer Batch Plant Certificates to verify mix design quantities and condition upon delivery to the site.
    b. Certificates to include: Date, time, ingredient quantities, water added at plant and on job, total mixer revolutions at time of placement, and time of departure.
    c. Concrete with specified water cement ratio: Add no water on site unless mix design and batch records each show additional water may be added. See ASTM C94 for additional requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

B. Verify work of other sections is complete and tested as required before proceeding.

3.2 PREPARATION

A. Observation, Inspection and Testing:

1. Architect/Engineer: Notify not less than 2 working days before each concrete placement, for observation and review of reinforcing, forms, and other work prior to placement of concrete.

2. Testing Agency: Notify not less than 24 hours before each placement for inspection and testing.

B. Placement Records: Contractor shall maintain records of time, temperature and date of concrete placement including mix design and location in the structure. Retain records until completion of the contract. Make available for review by Testing Agency and Architect/Engineer.

C. Coordinate placement of joint devices with erection of concrete formwork and placement of form accessories.

D. Verify location, position and inclusion of all embedded and concealed items.

E. Verify installation of vapor retarder under interior slabs on ground, as specified in related section, is complete.

F. Cleaning and Preparation:

1. Remove loose dirt, mud, standing water, and foreign matter from excavations and cavities.

2. Close cleanout and inspection ports securely.

3. Thoroughly clean reinforcement and other embedded items free from loose rust and foreign matter. Maintain reinforcing securely in place. Do not place concrete on hot reinforcing.

4. Dampen form materials and substrates on which concrete is to be placed at least 1 hour in advance of placing concrete; repeat wetting as necessary to keep surfaces damp. Do not saturate. Do not place concrete on saturated material.
   a. Thoroughly wet wood forms (except coated plywood), bottom and sides of trenches, adjacent concrete or masonry and reinforcement.
   b. Concrete slabs on base rock, dampen rock.
   c. Concrete slabs on vapor retarder, do not wet vapor retarder.

5. Verify that metal forms are clean and free of rust before applying release agent.

6. Thoroughly clean metal decking. Do not place concrete on wet deck surface.

7. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.

G. Drill holes in existing concrete at locations where new concrete is doweled to existing work. Insert steel dowels and prepare connections as detailed.

H. Do not overcut at existing concrete work to remain. Contractor is responsible for repair/replacement of overcut concrete to the Owner’s satisfaction.

3.3 PIPES AND CONDUITS IN CONCRETE

A. Slabs-on-Ground:

1. No pipe or conduit exceeding 1 inch outside diameter shall be embedded within the specified slab thickness except as specifically detailed.

2. Do not stack or abut pipes, maintain 3 inches minimum clearance.

B. Sleeving and Wrapping:

1. Foundations: Sleeve or wrap all individual pipe penetrations, minimum 1-1/2 inches clear to reinforcing all around.
   a. Sleeves: PVC. Provide 1 inch minimum clear all around O.D. pipe to I.D sleeve, UNO at ends, fill void space with mastic or plastic bituminous cement.
   b. Wrapped Vertical Pipes: Provide 1/8 inch nominal sheet foam with three wraps minimum, UNO.
   c. Wrapped Horizontal Pipes: Provide 1/8 inch nominal sheet foam with eight wraps minimum, UNO.

        d. Underground Fire Lines 4" and Larger: At sleeves provide 2 inch minimum clear all around O.D. pipe to I.D sleeve. At wrapped pipes, provide 1/8 inch nominal sheet foam with sixteen wraps minimum.

    2. Slabs or Curbs: Wrap pipes as described above.

C. Space groups of pipes/conduits at least 3 sleeve diameters apart, do not interrupt specified concrete and reinforcement.

    1. Provide block-outs as detailed when grouping of pipes/conduits in foundation or other structural member prevents spacing as described. Notify Architect/Engineer for review of any conditions not conforming to details.

    2. Center pipe/conduit penetrations in the depth and/or thickness of foundations.

    3. Maximum size of pipe/conduit penetrations shall not exceed the least dimension of concrete divided by 3.

D. Do not embed pipes/conduits in concrete slabs on metal deck.

E. Provide the following at pipes/conduits detailed to be embedded in a concrete beam, wall or column:

    1. Place as near as possible to center of member with reinforcing as specified on each side.

    2. Where reinforcing is located near or at center of member, place pipe or conduit 1 inch minimum clear from reinforcing and provide #3 at 12 inches on center perpendicular to the pipe/conduit. Reinforcing to extend 12 inches minimum past pipe/conduit each side.

    3. Maintain ¾ inch clear minimum from added reinforcing to face of concrete where not exposed to weather and 1-1/2 inches clear where exposed to weather.

    4. Space embedded items (groups of pipe/conduit, junction boxes or other elements) minimum 3 inches apart.

    5. Provide reinforcing in walls, beams, columns as detailed for groups of pipe/conduit. Provide minimum replacement reinforcement of same size and number for interrupted or displaced reinforcement for the full height, length, width of the wall, beam, and/or column on each side of the "effective opening."

3.4 CONCRETE PLACEMENT

A. Transporting:

    1. Provide clean, well-maintained equipment of sufficient quantity and capacity to execute the work and produce concrete of quality specified.

    2. Handle and transport concrete from mixer to final deposit location as rapidly as practicable. Prevent separation or loss of ingredients.

B. Perform concrete placement by methods which will not puncture, damage or disturb vapor retarder membrane. Repair all damage to vapor retarder membrane before covering.

C. Placement - General: Placement, once started, shall be carried on as a continuous operation until section of approved size and shape is completed. Provide construction joints as detailed on the drawings. Engineer's written approval required for all deviations.

1. Deposition:
   a. Deposit concrete to maintain an approximately horizontal plastic surface until the completion of the unit placement.
   b. Deposit as neatly as practicable in final position, minimize re-handling or flow.
   c. Do not drop concrete freely where reinforcing bars, embeds, or obstructions occur that may cause segregation. Provide spouts, elephant trunks, or other means to prevent segregation during placement.

2. Depth: Layered placement in columns and walls shall not exceed ten feet vertical depth.
   a. Place concrete in minimum 32 inch horizontal lifts.
   b. Schedule placement to ensure that concrete will not take initial set before placement of next lift.
   c. No horizontal cold joints are allowed in columns or walls.

3. Progress Cleaning: Remove all concrete spilled on forms or reinforcing steel in portions of structure not immediately concreted. Remove completely before concrete sets.

4. Interruptions: Shut down placement operations and dispose of all remaining mixed concrete and concrete in hoppers or mixers following all interruption in placement longer than 60 minutes.
   a. If such interruption occurs, provide new or relocate existing construction joints as directed by Engineer.
   b. Cut concrete back to the designated line, cleaning forms and reinforcing as herein specified.
   c. Prepare for resumption of placement as for new unit when reason for interruption is resolved.

D. Consolidation:

1. Consolidate all concrete thoroughly during placement with high-speed mechanical vibrators and other suitable tools. Perform manual spading and tamping to work around reinforcement, embedded fixtures, and into corners of formwork as required to obtain thorough compaction.
   a. Provide vibrators with sufficient amplitude for adequate consolidation.
   b. Use mechanical vibrators at each point of concrete placement.
   c. Keep additional spare vibrators, in addition to those required for use, at the site for standby service in case of equipment failure.

2. Consolidate each layer of concrete as placed.
   a. Insert vibrators vertically at points 18 to 30 inches apart; work into top area of previously placed layer to reconsolidate, slowly withdraw vibrator to surface.
   b. Avoid contact of vibrator heads with formwork surfaces.
   c. Systematically double back and reconsolidate wherever possible. Consolidate as required to provide concrete of maximum density with minimized honeycomb.

E. Unacceptable Materials:

1. Do not place concrete that has started to set or stiffen. Dispose of these materials.

2. Do not add water on site to concrete except as specified in the approved mix design, see PART 2 above.

F. Protection of installed work:

1. Do not introduce any foreign material into any specified drainage, piping or duct systems.

2. Contractor shall bear all costs of work required to repair or clean affected work as a result of failure to comply with this requirement.

3.5 CONCRETE JOINTS

A. Structural Joints (Construction/Cold Joints):

1. Locate joints only where shown, or as approved.

2. Review Required: Joints not indicated on the plans shall be located to meet the minimum requirements below, shall not impair the strength of the structure and shall be submitted to Architect/Engineer for review prior to placement of concrete.
   a. Indicate proposed location(s) of construction/cold/expansion joints on shop drawing submittals for review prior to placing concrete.

3. Clean and roughen all surfaces of previously placed concrete at construction joints by washing and sandblasting to expose aggregate to 1/4 inch amplitude.

4. Slabs-On-Ground: Maximum Length of continuous placement shall not exceed 60 feet without special review by the Architect/Engineer. Alternate or stagger placement sections.

5. Foundations: Maximum Length of continuous placement shall not exceed 200 foot increments. Provide “keyed” shut-off locations made up with form boards. Extend reinforcing one lap length or more through shut-off.
   a. All reinforcement shall be continuous through construction/cold joint, lapping to adjacent reinforcing in future placement.
   b. Construction Joints in Elevated Slabs: Review all proposed locations with Architect/Engineer.
   c. Construction Joints in Slabs on Metal Decking: Review all proposed locations with Architect/Engineer. Do not locate closer than 48 inches of centerline of beam.

6. Retaining Walls: Maximum Length of continuous placement shall not exceed 100 foot increments. Provide “keyed” shut-off locations made up with form boards to limit the length of continuous placement and at abrupt changes in wall thickness. Extend reinforcing one lap length or more through shut-off.
   a. Review all proposed locations with Architect/Engineer
   b. Horizontal construction joints are not allowed unless approved by the Engineer

7. Horizontal Construction Joints: Place 2 inch slurry (specified concrete mix less coarse aggregate) at beginning of pour at the bottom of walls unless a prior review of a mock-up section demonstrates that segregation of aggregate will not occur.

B. Expansion/Construction Joints (Dowel Joints and Control Joints):

1. Exterior Slabs-on-Ground:
   a. Expansion/Construction Joints: Provide dowel joints or control joints at a maximum dimension (in feet) of three times the slab thickness (in inches) in each direction unless noted otherwise (15'-0" maximum). Install joints to match slab level and in straight lines. Locate joints at all reentrant corners including blockouts.
   b. Proportions: Install joints to divide slab into rectangular areas with long dimensions less than 1.5 times short dimension.

2. Exterior Concrete Slabs on Ground (walkways, patios):
   a. Expansion/ construction joints: Provide a 2 inch deep troweled groove or asphalt impregnated joint material embedded 50 percent of the slab depth at 12 feet on center, maximum.
   b. Proportions: Place no section with a length larger than two times width. Additionally, place joints at all inside corners and at all intersections with other work.

3. Retaining Walls:
   a. Contraction Joints: Provide ¾ inch wide beveled wood strips attached to inside face of formwork on each side of the wall. Wood strips shall extend 1/8 times the wall thickness into the wall. Cut 50% of the horizontal reinforcing bars at contraction joint locations
   b. Proportions: Place joints at 2 times the height of the wall on center max, but not less than 10'-0". Joints shall not exceed 25'-0" on center.
   c. Review all proposed locations with Architect/Engineer

C. Joint Types:

1. Dowel Joint: A keyed joint with smooth dowels passing through to allow unrestricted movement due to contraction and expansion. Joints are as specified on the drawings.

2. Control Joint(s): Shrinkage crack control joints may be of the following types when shown on the drawings. Install joints in a straight line between end points with edges finished appropriate to type. Depth shall be 25% of the slab thickness, unless noted otherwise. Fill joints with sealant as shown on the drawings or as required by related sections.
   a. 1/4 inch wide troweled joint.
   b. Keyed joint: Only at locations where concealed by other finishes.
   c. Masonite Strip, 1/8 inch: Only at locations where concealed by other finishes.
   d. Saw Cut, 1/8 inch: Must be performed within eight hours of completion of finishing. Do not make saw cuts if aggregate separates from cement paste during cutting operation. Prevent marring of surface finish. Fill with flexible sealant.

3.6 VAPOR RETARDER

A. Vapor Retarder Installation: Install as specified in PART 2, ASTM E1643, and per manufacturer's recommendations including taping and lapping of seams, sealing of penetrations, and repair of damage. Do not extend vapor retarder below footings.

3.7 FLATWORK

A. General Requirements for All Concrete Formed & Finished Flat:

   1. Edge Forms and Screeds: Set accurately to produce indicated design elevations and contours in the finished surface, edge forms sufficiently strong to support screed type proposed.

   2. Jointing: Located and detailed as indicated.

   3. Consolidation: Concrete in slabs shall be thoroughly consolidated.

B. Flatwork Schedule:

   1. Exterior Slabs-On-Ground: Place concrete directly over sub-base as indicated.
      a. Sub-Base: Clean free-draining, crushed base rock, 4 inch minimum thickness, thoroughly compacted.

3.8 FORMED SURFACES

A. Form all concrete members level and plumb, except as specifically indicated. Comply with tolerances specified in ACI CODE-318, ACI SPEC-301, and this specification, except that maximum permissible deviation is 1/4 inch end-to-end for any single member.

B. Cambers: Provide all cambers indicated in the formwork construction. Set screeds to produce specified cambers in the finished concrete.

3.9 CONCRETE FINISHES

A. Flatwork Finishing:

   1. All exposed concrete flatwork surfaces shall be non-slip. See Architectural, Civil, and Landscape drawings.

   2. Perform with experienced operators.

   3. Finish surfaces monolithically. Establish uniform slopes or level grades as indicated. Maintain full design thickness.

   4. In areas with floor drains, maintain design floor elevation at walls; slope surfaces uniformly to drains as indicated on drawings.

   5. Flatwork Finish Types:
      a. Wood Float Finish: Surfaces to receive quarry tile, ceramic tile, or cementitious terrazzo with full bed setting system, or wood frame for raised finished floors.
      b. Steel Trowel Finish: Surfaces to receive carpeting, resilient flooring, seamless flooring, thin set terrazzo, thin set tile or similar finishes specified in related sections. Trowel twice, minimum.
      c. Broom Texture Finish: Exterior surfaces as indicated or for which no other finish is indicated. Finish as for steel trowel finish, except immediately following first troweling, (depending on conditions of concrete and nature of finish required) provide uniform surfaces texture using a medium or coarse fiber broom.

B. Other Concrete: Provide as required to achieve appearance indicated on structural and architectural drawings and related sections.

   1. Repair surface defects, including tie holes, immediately after removing formwork.

2. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.

3. Exposed Form Finish: Finish concrete to match forms. Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
    a. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.
    b. Grout Cleaned Finish: Wet areas to be cleaned and apply grout mixture by brush or spray; scrub immediately to remove excess grout. After drying, rub vigorously with clean burlap, and keep moist for 36 hours.
    c. Cork Floated Finish: Immediately after form removal, apply grout with trowel or firm rubber float; compress grout with low-speed grinder, and apply final texture with cork float.
4. Intermediate joint and score marks and edges: Tool smooth and flush unless otherwise indicated or as directed by the Architect.

5. Use steel tools of standard patterns and as required to achieve details shown or specified. All exposed corners not specified to be chamfered shall have radiused edges.

3.10 TOLERANCES

A. Minimum Flatwork Tolerances: Measure flatness of slabs with in 48 hours after slab installation in accordance with ACI PRC-302.1 and ASTM E1155 and to achieve the following FF and FL tolerances:

1. Exterior surfaces: 1/8 inch minimum per foot where sloped to drain. Level otherwise. FF20 and FL15.

2. Interior surfaces not otherwise shown or required: Level throughout. FF25 and FL20

3. Interior surfaces required to be sloped for drainage: 1/8 inch in 10 ft.

4. Finish concrete to achieve the following tolerances:
    a. Under Glazed Tile on Setting Bed: FF30 and FL20.
    b. Under Resilient Finishes: FF35 and FL25.
    c. Flooring manufacturеer and pertainent section of Division 9.

B. Formed Surface Tolerances:

1. Permanently Exposed Joints and Surfaces: Provide maximum differential height within two feet of, and across construction joints of 1/16 inch.

2. Vertical Elevations: Elevation of surfaces shall be as shown or approved.

3.11 SEPARATE FLOOR TOPPINGS

A. Prior to placing floor topping, roughen substrate concrete surface and remove deleterious material. Broom and vacuum clean.

B. Place required dividers, edge strips, reinforcing, and other items to be cast in.

C. Apply bonding agent to substrate in accordance with manufacturer's instructions.

D. Apply sand and cement slurry coat on base course, immediately prior to placing toppings.

E. Place concrete floor toppings to required lines and levels. Place topping in checkerboard panels not to exceed 20 feet in either direction.

F. Screed toppings level, maintaining surface tolerances per above.

3.12 CONCRETE CURING

A. Curing - General: Cure in accordance with ACI SPEC-308.1. Maintain concrete water content for proper hydration and minimize temperature variations. Begin curing immediately following finishing.

B. Protection During Curing: Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury. The General Contractor is responsible for the protection of the finished slab from damage.

   1. Avoid foot traffic on concrete for minimum of 24-hours after placement.

   2. Protect concrete from sun and rain.

   3. Maintain concrete temperature at or above 50 degrees F. during the first 7 days after placement. See Article ENVIRONMENTAL REQUIREMENTS.

   4. Do not subject concrete to design loads until concrete is completely cured, and until concrete has attained its full specified 28-day compressive strength or until 21 days after placement, whichever is longer.

   5. Protect concrete during and after curing from damage during subsequent building construction operations. See Article PROTECTION.

C. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

   1. Normal concrete: Not less than 7 days.

   2. High early strength concrete: Not less than 4 days.

D. Begin curing immediately following finishing.

E. Surfaces Not in Contact with Forms:

   1. Start initial curing as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than 3 days by water ponding, water-saturated sand, water-fog spray, or saturated burlap.

   2. Begin final curing after initial curing but before surface is dry.
      a. Moisture-retaining cover: Seal in place with waterproof tape or adhesive.
      b. Curing compound: Apply in two coats at right angles, using application rate recommended by manufacturer.

   3. In addition, see specific conditions noted below.

F. Slabs on Ground: Cure by one of the following methods:

   1. Water Cure (Ponding): Maintain 100 percent coverage of water over floor slab areas, continuously for minimum 7 calendar days.

2. Spraying: Spray water over floor slab areas and maintain wet for 7 days.

3. Moisture-Retaining Film or Paper: Lap strips not less than 6 inches and seal with waterproof tape or adhesive; extend beyond slab or paving perimeters minimum 6 inches and secure at edges; maintain in place for minimum 7 days.

4. Absorptive Moisture-Retaining Covering: Saturate burlap-polyethylene and place burlap-side down over floor slab areas, lapping ends and sides and extend beyond slab or paving perimeters 6 inches minimum; maintain in place for minimum 7 days.

5. Liquid Membrane-forming Curing Compound: Provide only when subsequent concrete treatments or finish flooring specified in related sections will not be affected by cure/sealer. Apply curing compound in accordance with manufacturer's instructions at the maximum recommended application rate in two coats, with second coat applied at right angles to first.

G. Formed Concrete Members: Cure by moist curing with forms in place for full curing period.

1. Protect free-standing elements from temperature extremes.

2. Maintain forms tight for minimum 7 days. Maintain exposed surfaces continuously damp and completely covered by sheet materials thereafter.

3. Maintain all shoring in place. Refer to related sections specifying formwork.

4. Membrane Curing Compound: Apply compound in accordance with manufacturer's instructions in one coat.

H. Foundations: Apply curing compound immediately after floating.

3.13 CONCRETE HARDENER

A. Apply hardener to all floor slabs not receiving other finishes after 30 days minimum curing. Clean slabs of non-compatible cure/sealers or other foreign material(s) and apply in strict accordance with the manufacturer's directions.

3.14 GROUTING AND DRY PACK

A. Set steel plates on concrete or masonry with high strength grout bed, completely fill all voids; thoroughly compact in place. See Section 05 1200 or 05 1100.

B. Bolts or inserts dry packed or grouted in place shall cure for minimum 7 days before tensioning.

3.15 FIELD QUALITY CONTROL

A. Testing and Inspections by Independent Testing Agency: Provided verification and inspection of concrete per CBC Table 1705A.3. Provide written reports for to Engineer, Architect, Contractor and Building Official for the following tests and inspections:

B. Testing & Inspection: Provide periodic inspection of reinforcing steel. Provide continuous inspection during placement of structural class concrete, 3000 psi or more. Non-structural class concrete with a design strength of 2500 psi or less to have periodic inspection on a 150 cubic yard basis as required to assure conformance.

1. Provide periodic inspection of bolts in concrete prior to and during placement where so noted on the construction documents.

2. Structural Concrete Cylinder Tests: Form in accordance with ASTM C31.
    a. Take four standard 6 inch x 12 inch (or five 4 inch x 8 inch) cylinder specimens on the site, of each class of concrete as specified in PART 2, not less than once a day or for each 50 cubic yards or 2000 sq ft or fraction thereof placed each day.
    b. Record the location of each concrete batch in the building in a log and also note on each specimen.
    c. Perform standard compression test of cylinders in accordance with ASTM C39, one at 7 days and two (three for 4x8 cylinders) at 28 days.
    d. Hold fourth (fifth) cylinder untested until specified concrete strengths are attained.

3. Structural Concrete Slump Test and Air Tests: Perform slump in accordance with ASTM C143 and air content in accordance with C231 or C173 at the time of taking test cylinders, and/or at one-hour intervals during concrete placing.

4. Measure and record concrete temperature in accordance with ASTM C1064 upon arrival of transit mixers and when taking specimens. Note weather conditions and temperature.

5. Determine concrete density in accordance with ASTM C138 at the time of forming test cylinders.

6. Propose adjustments to reviewed mix designs for Architect / Engineer review to account for variations in site or weather conditions, or other factors as appropriate.

7. Water Vapor Transmission Tests: Floors receiving floor finishes specified in related sections will be tested prior to installation of flooring systems. Refer to sections specifying floor finishes for related requirements.

C. Services by Contractor:

1. Rejection of Concrete Materials: Do not use the following without prior written approval of the Architect/Engineer;
    a. Materials without batch plant certificates.
    b. Materials not conforming to the requirements of these specifications.

3.16 ADJUSTING

A. Inspect all concrete surfaces immediately upon formwork removal. Notify Architect/Engineer of identified minor defects. Repair all minor defects as directed.

B. Surface and Finish Defects: Repair as directed by the Architect/Engineer, at no added expense to the Owner. Repairs include all necessary materials; reinforcement grouts, dry pack, admixtures, epoxy and aggregates to perform required repair.

1. Repair minor defective surface defects by use of drypack and surface grinding. Specific written approval of Architect/Engineer is required. Submit proposed patching mixture and methods for approval prior to commencing work.

2. Slabs-on-Ground: Review for "curled" slab edges and shrinkage cracks prior to installation of other floor finishes. Grind curled edges flush, fill cracks of 1/16 inch and greater with cementitious grout.

3. Grind high spots, fins or protrusions caused by formwork; Fill-in pour joints, voids, rock pockets, tie holes and other void not impairing structural strength. Provide surfaces flush with surrounding concrete.

3.17 DEFECTIVE CONCRETE

A. Defective Concrete: Concrete not conforming to required compressive strength, lines, details, dimensions, tolerances, finishes or specified requirements; as determined by the Architect/Engineer.

B. Repair or replacement of defective concrete will be determined by the Architect/Engineer who may order additional testing and inspection at his option. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

C. Specific Defects:

1. "Low-Strength"; Concrete Not Meeting Specified Compressive Strength after 28 days:
    a. Concrete with less than 25% Fly Ash or 35% Slag as cementitious material: Test remaining cylinder(s) at 56 days. If strength requirements are met, concrete strength is acceptable.
    b. Concrete with 25% or more Fly Ash or 35% or more Slag as cementitious material: Test remaining cylinder(s) at 70 days. If strength requirements are met, concrete strength is acceptable.

2. Excessive Shrinkage, Cracking, Crazing or Curling; Defective Finish: Remove and replace if repair to acceptable condition is not feasible.

3. Lines, Details, Dimensions, Tolerances: Remove and replace if repair to acceptable condition is not feasible.

4. Slab sections not meeting specified tolerances for trueness/flatness or lines/levels: Remove and replace unless otherwise directed by the Architect/Engineer. Minimum area for removal: Fifteen square feet area unless directed otherwise by the Architect/Engineer.

5. Defective work affecting the strength of the structure or the appearance: Complete removal and replacement of defective concrete, as directed by the Architect/Engineer.

3.18 CLEANING

A. Maintain site free of debris and rubbish. Remove all materials and apparatus from the premises and streets at completion of work. Remove all drippings; leave the entire work clean and free of debris.

B. Slabs to Receive Floor Finishes Specified in other sections: Remove non-compatible cure/sealers or other foreign material(s) which may affect bonding of subsequent finishes. Leave in condition to receive work of related sections.

3.19 PROTECTION

A. Protect completed work from damage until project is complete and accepted by Owner.

B. Construction Loads: Submit engineering analysis for equipment loads (including all carried loads) specified in article submittals.

C. Keep finished areas free from all equipment traffic for a minimum of 4 additional days following attainment of design strength and completion of curing.

D. Protection of Drainage Systems:

  1. Care shall be taken not to introduce any foreign material into any specified drainage, piping or duct system.

  2. Cost of work to repair or clean drainage system as a result of failure to comply with this requirement will be back charged to the contractor.

E. Cover traffic areas with plywood sheets or other protective devices; maintain protection in place and in good repair for as long as necessary to protect against damage by subsequent construction operations.

END OF SECTION

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SECTION 05 1100

STRUCTURAL AND MISCELLANEOUS STEEL

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes: All labor, materials, equipment and operations required to complete structural and miscellaneous metals in shapes and configurations indicated; including:

1. Miscellaneous structural steel and connections; fabricated connectors and hangers installed by related sections.
2. Steel inserts embedded in concrete, installed by related sections.
3. Fabricated steel items embedded in concrete installed by related sections.
4. Shop priming and field touch-up, galvanizing.
5. Bracing, Shoring, Fabrication and Erection.

B. Related Sections:

1. Pertinent sections of Division 01 specifying Quality Control and Testing Agency services.
2. Pertinent Sections of other Divisions specifying concrete reinforcement, formwork, concrete, structural and miscellaneous metal fabrications, steel joists, metal decking, cold-formed metal framing, rough carpentry.

1.2 REFERENCES

A. California Code of Regulations, Title 24, latest adopted edition (herein noted as CBC): Chapter 22A Steel.

B. American Welding Society (AWS) D1.1 “Structural Welding Code - Steel”.

C. Underwriters Laboratories (UL) FRD “Fire Resistance Directory”.

1.3 SUBMITTALS

A. Submit in accordance with pertinent sections of Division 01 specifying submittal procedures. The General Contractor shall review and approve shop drawings prior to submittal to the Architect/Engineer. Submittals that do not meet these requirements will be returned for correction without review.

B. Limitation of Review: Structural Engineer's review will be for general conformance with design intent as indicated in the Contract Documents and does not relieve Contractor of full responsibility for conformance with the Contract Documents.

C. Product Data: Submit manufacturer's product data, specifications, location and installation instructions for proprietary materials and reinforcement accessories. Provide samples of these items upon request.

D. Shop drawings: Submit each building as a complete unit. Do not mix components from multiple units of work in a submittal. Include all of the following;

1. Profiles, sizes, spacing, locations of structural members, openings, attachments, and fasteners.

2. Fabrication tolerances for all steel.
3. Connections: All, including type and location of shop and field connections.
4. Indicate welded connections with AWS A2.4 welding symbols. Indicate net weld lengths, type, size, and sequence. Designate demand critical welds.
5. Cross-reference all shop drawing detail references to contract document detail references.
6. Secure all field measurements as necessary to complete this work prior to submitting shop drawings for review.

E. Certifications:

1. Steel Materials: Submit the following for identified materials.
    a. Manufacturer's Mill Certificate: Certify that products meet or exceed specified requirements.
    b. Mill Test Reports: Indicate structural strength, destructive test analysis, and non-destructive test analysis.
    c. Contractor's affidavit certifying that all identified steel materials provided are of the grades specified and match the certificates supplied.
2. Welders Certificates: Certify welders employed on the Work, verifying AWS qualification per AWS D1.1.

F. Samples: Provide samples to the Testing Agency as specified in Article SOURCE QUALITY CONTROL, at no additional costs.

1.4 QUALITY ASSURANCE

A. Requirements of Regulatory Agencies, refer to pertinent sections of Division 01 and CBC Chapter 17A.

B. All tests shall be performed by a recognized testing agency as specified in pertinent sections of Division 01.

C. Certification and Identification of Materials and Uses: Provide Testing Agency with access to fabrication plant to facilitate inspection of steel. Provide notification of commencement and duration of shop fabrication in sufficient time to allow inspection and all material identification/test information listed below.

1. Test all steel as required by ASTM A6.
2. Provide manufacturer's Mill Test Reports for all materials. Include chemical and physical properties of the material for each heat number manufactured. Tag all fabricated materials with heat number.
3. Provide letter certifying all materials supplied are from heat numbers covered by supplied mill certificates. Include in letter the physical location of each material type and/or heat number in the project (i.e. walls, braced frames etc.).
4. Unidentified Material Tests: Where identification of materials by heat number or mill tests cannot be made, Owner's Testing Agency shall test unidentified materials.
5. Provide all certification, verifications, and other test data required to substantiate specified material properties at no additional cost to the Owner.

D. Testing and Inspection: Tests and Inspections performed by Independent Testing Agency are specified below in Articles SOURCE QUALITY CONTROL and FIELD QUALITY CONTROL. Duties and limitations of Independent Testing Agency, test costs and test reports in conformance with pertinent sections of Division 01.

E. The following standards are the minimum level of quality required. Provide higher quality work as specifically indicated in the Contract Documents.

1. Workmanship and details of structural steel work shall conform to the CBC and AISC 360.
2. The quality of materials and the fabrication of all welded connections shall conform to AWS D1.1.
3. Comply with Section 10 of AISC 303 for architecturally exposed structural steel.

F. The Testing Agency will review all submittals and testing of materials.

G. All re-inspections made necessary by non-conforming work shall be at the Contractor's expense.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to project site in bundles marked with durable tags indicating heat number, mill, member size and length, proposed location in the structure and other information corresponding with markings shown on placement diagrams.

B. Handle and store materials above ground to prevent damage, contamination or accumulation of dirt or rust.

1.6 SCHEDULING AND SEQUENCING

A. Organize the work and employ shop and field crew(s) of sufficient size to minimize inspections by the Testing Agency.

B. Provide schedule and sequence information to Testing Agency in writing upon request. Update information as work progresses.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Structural Steel Plates: ASTM A36 or ASTM A572 Gr. 50 or ASTM A529 Gr. 50

B. Pipe: ASTM A53, Grade B.

C. Arc-Welding Electrodes: AWS Standards E70 or equivalent, except no E70T-4 allowed.

D. Other Welding Materials: AWS D1.1; type required for materials being welded.

2.2 ACCESSORIES

A. Building Structural Steel Primers: Comply with local VOC limitations of authorities having jurisdiction and the California Green Building Code. Verify compatibility with finish coats specified in other sections. Follow manufacturers printed instructions. Apply one coat unless otherwise directed.

1. Type A: Self-Crosslinking Hydrophobic Acrylic passing 2000 hours ASTM D4585 and 7000 hours ASTM D5894. “Series 115 Uni-Bond DF” by Tnemec (2.0 to 4.0 mils DFT).
2. Type B: Organic Zinc-Rich Urethane passing 50,000 hours ASTM B117 and 15000 hours ASTM G85. “Series 90-97 Tneme-Zinc” by Tnemec (2.5 to 3.5 mils

DFT) or “Series 94-H20 Hydro-Zinc” by Tnemec (2.5 to 3.5 mils DFT).

3. Type C: MIO-Zinc Filled Urethane passing 10,000 hours ASTM B117 and 5000 hours ASTM D4585. “Series 394 PerimePrime” by Tnemec (2.5 to 3.5 mils DFT).

B. Galvanizing: ASTM A153 and A123.

C. Touch-Up Primer for Galvanized Surfaces: Type B primer.

2.3 FABRICATION

A. Shop fabricate to greatest extent possible.

B. Continuously seal built up members by continuous welds where exposed to weather.

C. Fabricate connections for bolt, nut, and washer connectors.

D. Protect all materials, before and after fabrication, from rust, corrosion, dirt, grease, and other foreign matter.

E. Fabricate framing members free from twists or bends. Form holes, cut and sheared edges neatly without kinks, burrs, or warped edges.

F. Exposed Steel: Straight, smooth, free of nicks, scars or dents.

G. Gas Cutting: Gas cutting of holes in a member shall not be permitted.

H. Splicing of members: Members requiring splicing due to length requirements may be spliced using full penetration butt welds when such welds and procedures are inspected and certified by the Testing Agency, in conformance with AWS and AISC standards. The location of splices shall be approved by the Architect/Engineer in writing prior to fabrication.

I. Welding: Welding of structural steel connections shall be performed by qualified welders in accordance with AWS Standards. All weld sizes shall match those shown on the drawings.

1. Preparation: Clean all surfaces free of rust, paint and all foreign matter. Remove paint or scale by brushing, chipping or hammering as required. Chip clean and wire brush burned or flame cut edges before welding. Space and alternate welds, clamping as necessary to prevent warp or misalignment.
2. Sequence Welding: When welds enclose, or partially enclose, the perimeter or portion of the surface of a member, make weld bead in sequence, or staggered. Minimize internal stresses. Weld groups of members occurring in a single line in staggered sequence to minimize distortion of the structural frame.
3. Faulty and Defective Welding: Welds failing to meet AWS standards and the Contract Documents shall be rejected and remade at Contractor expense. All welds showing cracks, slag inclusion, lack of fusion, bad undercut or other defects, ascertained by visual or other means of inspection shall be removed and replaced with conforming work.
4. Minimum Weld Strengths: All welds shall match the minimum weld sizes recommended by AISC. Details of fabrication not specifically shown shall match similar details which are specifically shown. All bevel and groove welds shall be full penetration unless size is noted otherwise.
5. Threaded studs, headed studs, and deformed bar anchors shall be full-fusion

welded conforming to ASW D1.1.

J. Grinding: Grind smooth the following structural steel and connections;

1. Exposed cut ends of structural and fabricated shapes.
2. All welds exposed to view.
3. Mitered and fit-up corners and intersections.

K. Back-Up Bars: Required for all complete penetration welds.

L. Comply with Section 10 of AISC 303 for architecturally exposed structural steel (AESS). See architectural & structural drawings for locations of AESS.

2.4 FINISHES

A. Steel exposed to inclement atmospheric conditions or weather (such as coastal moisture or seasonal rain) shall be sufficiently primed or otherwise protected against corrosion. If condition of steel is suspect due to weathering/corrosion, Contractor shall bear cost of inspection to determine if excessive corrosion is present and if steel member(s) requires repair or replacement. Contractor shall bear cost of repair or replacement.

B. Prepare and finish structural and miscellaneous steel component surfaces as follows, unless a higher standard-of-care is determined necessary per item A:

1. Unpainted, interior, dry exposure surfaces need not be primed.
2. Finished painted, interior, dry exposure surfaces:
    a. Surface Preparation: SSPC-SP2 Hand-Tool and/or SP3 Power-Tool Cleaning. Apply Primer Type A. Field touchup with same primer.
    b. Where jobsite exposure is expected to exceed 6 months, SSPC-SP6 / NACE No. 3 Commercial Blast-Cleaning is required. Apply Primer Type B or C. Field touchup with same primer.
3. Finish painted surfaces with exterior exposure, interior exposure subject to wet conditions or fumes, or surfaces to receive high performance finish coatings (for example epoxy or urethane coatings.
    a. Surface Preparation: SSPC-SP6 / NACE No. 3 Commercial Blast-Cleaning to create a dense, uniform angular surface profile of 2.0 mils minimum. For severe (immersion) exposure, SSPC-SP10 / NACE No. 2 Near-White Blast-Cleaning is required.
    b. Apply Primer Type B. Field touchup with same primer.
4. Surfaces to be fire proofed need not be primed unless required by the fireproofing manufacturer or if jobsite exposure is expected to be inclement per item A. Where unprimed steel is to receive fireproofing, prepare steel surface as required by fireproofing manufacturer. If fireproofed surfaces are to be primed, provide primer as follows:
    a. Surface Preparation: SSPC-SP3 Power-Tool Cleaning.
    b. Apply Primer Type C. Field touchup with same primer.
5. Exterior exposed (unpainted) surfaces and as otherwise indicated to receive galvanizing:
    a. Galvanize per ASTM A123 Class 55 minimum. Passivation agents are not permitted on galvanized metal that is to be painted. Provide vent holes per ASTM A385 at closed sections (such as HSS). Submit proposed location of vent holes for review by Engineer.
    b. Connection hardware shall be hot-dip galvanized per ASTM A153 or F2329. Mating bolts and nuts shall receive the same zinc-coating process.

    - c. Repair all uncoated, damaged, or altered galvanized surfaces per ASTM A780.

- C. Do not prime the following surfaces unless otherwise indicated:

  1. Connections to be field welded.
  2. Steel in contact with concrete.
  3. Surfaces to receive welded metal decking.

- D. Do not cover up work with finish materials until inspection is complete and work is approved by the Testing Agency.

2.5 SOURCE QUALITY CONTROL

- A. An independent Testing Agency will perform source quality control tests and submit reports, as specified in pertinent sections of Division 01.

- B. Steel Materials Testing:

  1. No testing is required for materials identified in accordance with CBC 2202A.1 (heat number, grade stencil, etc.).
  2. Unidentified steel- General: Test all structural shapes. In addition, test to verify Fy and Fu values when engineering requirements exceed Fy = 25 ksi for design.

- C. Shop Welding Inspection:

  1. Testing Agency shall inspect and certify all structural welds.
  2. Welder Qualifications: Welding inspector shall verify that all the welders are properly qualified prior to steel fabrication and state the qualifications of each welder in the welding inspection report.
  3. Welding Inspection: Continuous inspection required unless otherwise noted below. Comply with requirements of AWS D1.1.
     - a. Welding Inspector shall check all welds, materials, equipment and procedures.
     - b. Welding Inspector shall provide reports certifying the welding is as required and has been done in conformity with the plans, specifications and codes.
     - c. Welding Inspector shall use radiographic, ultrasonic, magnetic particle, or any other necessary aid to visual inspection to assure adequacy of welds. Ultrasonic Testing (UT) shall be required for all complete joint penetration (CJP) welds of material 5/16 inch thick or greater.
  4. Periodic Inspection Acceptable:
     - a. Single pass fillet welds not exceeding 5/16 inch.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that conditions are appropriate for erection of structural steel and that the work may properly proceed.

3.2 ERECTION

- A. Erect structural steel in compliance with AISC 303.

B. Framing:

1. Erect all structural steel true and plumb.
2. Verify proper final alignment prior to making final connections.

C. Field Connections:

1. Workmanship of field bolted and welded connections shall conform in all respects to methods and tolerances specified for fabrication.
2. Field weld components indicated on shop drawings. Sequence field welds to minimize built-up stress and distortion of the structural frame. Verify sequence with Engineer. Coordinate field welding schedule with Testing Laboratory.
3. Welded Studs: Install in accordance with manufacturer's instructions and structural welding code AWS D1.1.

D. Supports, Shoring and Bracing: Allow for erection loads and provide sufficient temporary bracing to maintain structure in safe condition, plumb, and in true alignment until completion of erection and installation of permanent bracing. Conform to requirements of all applicable laws and governing safety regulations. Resist imposed loads, including those of stored materials and equipment.

1. Provide all temporary supports, shoring and bracing necessary to achieve work of tolerances indicated.
2. Provide all necessary temporary flooring, planking and scaffolding required for erection of steel, and support of erection machinery.
3. Construction Loading: Do not overload the structure or temporary supports with stored materials, equipment or other loads.
4. Maintain temporary bracing and shoring until work is complete, and longer as required to ensure stability and safety of structure.

E. Do not make final connections until structure is aligned to meet specified tolerances.

3.3 ERECTION TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

3.4 FIELD QUALITY CONTROL

A. The independent Testing Agency will perform field quality control tests, as specified in pertinent sections of Division 01.

B. Field Welding Inspection: Conform to all requirements of section SOURCE QUALITY CONTROL.

1. Inspect mating surfaces.
2. Test all materials prior to use. Use only materials meeting specified requirements.

3.5 ADJUSTING

A. Touch-up damaged finishes with compatible specified primer.

B. Replace defective or damaged work with conforming work. Replace all defective work at

Contractor's expense.

C. Straighten materials by means that will not injure the materials.

D. Replace defective or damaged work which cannot be corrected in the field with new work, or return defective items to the shop for repair.

E. Architect/Engineer shall review all proposals for the repair or replacement of damaged, defective, or missing work.

F. Pay expenses incurred by Owner for Architect/Engineer's costs for (re-)design and obtaining approvals of Authorities Having Jurisdiction (AHJ) necessitated by incomplete, inefficiently scheduled, improperly performed, defective or nonconforming work, as specified in pertinent sections of Division 01.

G. Pay expenses due to re-testing and re-inspection necessitated by incomplete, inefficiently scheduled, improperly performed, defective or nonconforming work, as specified in pertinent sections of Division 01.

3.6 CLEANING AND PROTECTION

A. Clean all surfaces upon completion of erection; leave free of grime and dirt. Remove unused materials, tools, equipment and debris from the premises and leave surfaces broomed clean.

B. Protect work from damage by subsequent operations.

END OF SECTION

SECTION 05 52 00

HANDRAILS & RAILINGS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Steel tubing and steel bar handrails.

B. Steel tubing and steel bar guardrails and posts.

C. Brackets and fittings.

1.2 REFERENCES

A. CAS/CAR – California Accessibility Statues/California Accessibility Regulations, Books 1 and 2, May, 1994.

B. ASTM - American Society for Testing and Materials

C. International Building Code, latest adopted edition, as amended by California Building Code 2019 edition Volume 2, Chapter 22, (noted herein as CBC).

D. "Standard Code for Welding in Building Construction", American Welding Society (AWS).

E. ASTM A53 – Type E or S, Grade B Pipe.

F. ASTM A153 – Zinc coating (Hot-Dip) on iron and steel hardware.

G. ASTM A500 – Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

H. ASTM A123 – Zinc (Hot-Dip Galvanized) Coating on Iron and Steel Products.

I. Related Work Specified Elsewhere

    1. Section 01 45 00: Quality Control

1.3 SUBMITTALS FOR REVIEW

A. Submit under provisions of Section 01 33 00.

B. Stop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners and accessories.

C. Sample: Submit three samples of handrail and each component.

D. Welder Certifications.

1.4 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated on shop drawings.

PART 2 - PRODUCTS

2.1 STEEL RAILING SYSTEM

A. Fasteners, Plates, Brackets, Flanges and Bases: Manufactured by Craneveyor Corp., South El Monte, CA., or equal.

B. Handrails, Guardrails, Posts, Pickets, Rails: size as shown on Drawings. Round steel pipe. Welded joints, galvanized, ASTM A123.

1. Pipe yield strength: 35 ksi.

2. Flat Bar for Guide Rail: ASTM A36 ¼” thick by 2” wide steel plate as shown on drawings with welded joints, galvanized, ASTM A123.

C. Fittings: Elbows, T-shapes, wall brackets, escutcheons: Cast steel. Brackets: Round top to accept tube rail, size to allow minimum 1-1/2 inch clearance from rail to wall.

D. Exposed Fasteners: Flush countersunk screws or bolts; consistent with design of railing.

E. Galvanizing: Thickness of coating on tubing in accordance with ASTM A123. Fittings shall be galvanized in accordance with ASTM A153.

F. Finish: Hot dipped galvanized finish. Submit sample for review.

G. Non-Shrink Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 5,000 psi in 24 hours and 8,000 psi in 7 days; SUPER POR-ROK ANCHORING CEMENT manufactured by Minwax Construction Products Division, Montvale, NJ, or an approved equal meeting the same standard of performance.

H. Touch-Up Primer for Galvanized Surfaces: Ready mixed Zinc rich galvanizing compound, DEVCON 2, by Devcon Corp., Danvers, MA, GALVICON by Southern Coatings, Sumter, SC, or equal.

I. Epoxy Adhesive: Two component material suitable for anchoring into dry or damp concrete. Same as Burke’s "Burk Epoxy MV", Covert’s "CIA-Gel 7000", Hilti’s "HIT C-100" or equal product.

2.2 FABRICATION

A. Fabricate handrails of specified tubing only in conformance with CSAS requirements.

B. Fit and stop assemble components in largest practical sizes for delivery to site.

C. Fabricate components with joints tightly fitted and secured.

D. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.

E. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

F. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

G. Accurately form components to each other and to building structure.

H. Hot-dip galvanize all fabricated assemblies in accordance with ASTM A123.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

B. Beginning of installation means erector accepts existing conditions.

3.2 PREPARATION

A. Clean and strip steel items to bare metal where site welding is required.

3.3 INSTALLATION

A. Set vertical supports in core-drilled holes with the specified non-shrink grout or epoxy adhesive.

B. Install components plumb and level, accurately fitted, free from distortion or defects.

C. Provide anchors, plates or angles required for connecting railings to structure. Anchor railing to structure.

D. Field weld anchors as indicated on shop drawings. Grind welds smooth.

E. Conceal bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.

F. Touch up welds and chipped surfaces with specified galvanizing compound prior to completion.

3.4 ERECTION TOLERANCES

A. Maximum Variation from Plumb: ¼ Inch in 10 feet.

3.5 DEFECTIVE WORK AND MATERIALS

A. Work found to be defective, missing or damaged shall be immediately replaced with proper work. Such replaced work and the inspection for same shall be at the expense of the Contractor. All proposals for the repair or replacement of damaged, defective, or missing work to be reviewed by the Architect.

B. Straightening of any materials, if necessary, shall be done by a process and in a manner that will not injure the materials.

C. If defects or damage work cannot be corrected in the field, the material shall be returned to the shop or new parts furnished. The Contractor shall replace all work at his own expense.

3.6 CLEANING

A. After erection, all surfaces shall be cleaned and left free of all grime and dirt. Remove unused materials, tools, equipment and debris from the premises and leave broom clean.

B. For Galvanized Surfaces: Clean welds, bolted connections and abraded areas and apply galvanizing repair. Paint to comply with ASTM A780.

END OF SECTION

SECTION 06 13 00

SITE CARPENTRY

PART 1- GENERAL

1.1 DESCRIPTION

A. Provide all labor, equipment and materials for the installation of the site carpentry as shown on the landscape drawings and specified.

1.2 QUALITY ASSURANCE

A. Douglas Fir and Pressure Treated Douglas Fir (PTDF): As graded by a certified grading agency approved by the USDA American Lumber Standards Committee.

B. Redwood: "Standard Specifications for Grades of California Redwood Lumber" graded under the rules of the Redwood Inspection Service.

C. Plywood: Shall carry APA grade-trademark of the American Plywood Association and meet U.S. Product Standard PSI for softwood plywood.

D. Lumber: Grade stamp to contain symbol of grading agency, mill number of name, grade of lumber, species of species grouping or combination designation, rules under which grades, where applicable, and condition of seasoning at time of manufacture.

E. Softwood Plywood: Appropriate grade trademark of the American Plywood Association.
   1. Type, grade, class and Identification Index.
   2. Inspection and testing agency mark.

F. All wood surfaced, four sides, unless otherwise designated "rough" or "resawn”.

1.3 PROTECTION

A. Lumber (and timber) shall be stored in neat stacks at the site unless it is to be used immediately. All lumber shall be piled so that it may be readily inspected and shall be handled in a manner that will avoid injury or breakage.

B. Structural timber shall be neatly piled on skids above ground and shall be protected from the sun when necessary to prevent warping. Treated timber shall be handled with rope slings. Cant hooks, peaveys or other sharp instruments shall not be used in handling treated timber. Undue injury in handling will be cause for rejection.

1.4 SUBMITTALS

A. Samples: Submit samples of wood that will be exposed in finished work, to show face texture and finished color of material.

B. Samples: Submit samples of hardware and fasteners that will be exposed in finished work, to show face texture and color of material.

PART 2 - MATERIALS

2.1 LUMBER AND TIMBER

A. Except where otherwise noted, all lumber shall conform to the allowable characteristics permitted within the applicable grading rule. No splits, checks, holes, decay or other irregularities will be permitted except those characteristic of that grade.

B. Lumber shall be as indicated on drawings or specified.

C. Lumber and timber noted on the drawings shall be Pressure Treated Douglas Fir, S4S.

2.2 HARDWARE & FASTENERS

A. Except where otherwise noted, all hardware & fasteners shall be hot dipped galvanized or stainless steel.

PART 3 - EXECUTION

3.1 WORKMANSHIP

A. Workmanship shall be first class throughout. All lumber (and timber) shall be accurately cut and framed to a close fit and shall have even bearing over the entire contact surface. All joints shall be square and tight unless otherwise shown. No shimming will be permitted in making joints. Work shall be free of hammer marks, dents or other disfiguration. Nails and other hardware to be sized per California Building Code. Nailing Schedule and to be seated flush unless otherwise shown. Drive nails perpendicular to the framing lumber and the wood product; drive nails flush with the product's surface. Nails shall penetrate at least 1-1/4 inches into the structural framing Counter-sink finishing nails 1/16 inch. Joints shall fall over framing lumber and shall be double nailed. Do not nail any less than 1/2 inch from any edge. Holes for bolts shall be bored with a bit. 1/16 inch larger than the bolt. Holes for lag screws shall be bored with a bit not larger than the base of the thread.

B. Holes for drift pins and dowels in untreated timber shall be bored with a bit 1/16 inch less in diameter than the pin or dowel. Holes for drift pins and dowels in treated timber shall be bored with a bit of the same diameter as the pin or dowel. Holes in small timbers for wire spikes shall be bored with a bit of the same diameter or smallest dimension of the spike, when necessary, to prevent splitting.

C. Bolts 5/8" and less in diameter shall be fitted with cut washers, and all bolts and lag screws over 5/8" in diameter shall be fitted with cast or malleable iron washers unless otherwise shown on the plans. Select bolt length to fit situation.

D. Where bolts project beyond nut, cut off 1/8" from nut and paint within 24 hours with heavy coat of Zinc Chromate primer paint and one coat of Aluminum finish paint (to match the galvanized bolt finish, unless otherwise noted).

E. Exposed fasteners in exterior work shall be hot-dipped galvanized or as otherwise noted on drawings.

F. Lumber shall be selected for good crown and set crown down. No lumber with excess crown shall be used.

3.2 PROTECTION

A. Protect installed products until completion of project. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Urethane joint sealants.

1.3 ACTION SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Sustainable Design Submittals:

1. Product Data: For sealants, indicating VOC content.

2. Laboratory Test Reports: For sealants, indicating compliance with requirements for low-emitting materials.

C. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

D. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- (13-mm-) wide joints formed between two 6-inch- (150-mm-) long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

E. Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.

2. Joint-sealant manufacturer and product name.

3. Joint-sealant formulation.

4. Joint-sealant color.

1.4 INFORMATIONAL SUBMITTALS

A. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.

B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.

1.6 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.

2. When joint substrates are wet.

3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.

4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. VOC Content: Sealants and sealant primers shall comply with the following:

1. Architectural sealants shall have a VOC content of 250 g/L or less.

2. Sealants and sealant primers for nonporous substrates shall have a VOC content of 250 g/L or less.

3. Sealants and sealant primers for nonporous substrates shall have a VOC content of 775 g/L or less.

4. Sealant shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers.”

C. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

D. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

E. Suitability for Contact with Food: Where sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.

F. Colors of Exposed Joint Sealants: Match Architect's samples.

2.2 URETHANE JOINT SEALANTS

A. Multicomponent, Nonsag, Urethane Joint Sealant: ASTM C 920, Type M, Grade NS, Class 25, for Use NT.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    a. BASF Building Systems; Sonolastic NP 2.
    b. May National Associates, Inc.; Bondaflex PUR 2 NS.
    c. Pecora Corporation; Dynatred.
    d. Sika Corporation, Construction Products Division; Sikaflex - 2c NS.
    e. Tremco Incorporated; Vulkem 227.

2.3 JOINT SEALANT BACKING

A. General: Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), Type B (bicellular material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.4 MISCELLANEOUS MATERIALS

A. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

B. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

    a. Unglazed surfaces of ceramic tile.

    b. Cement plaster.

3. Remove laitance and form-release agents from concrete.
4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:

    a. Metal.

    b. Glass.

    c. Porcelain enamel.

    d. Glazed surfaces of ceramic tile.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

   1. Do not leave gaps between ends of sealant backings.

   2. Do not stretch, twist, puncture, or tear sealant backings.

   3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

   1. Place sealants so they directly contact and fully wet joint substrates.

   2. Completely fill recesses in each joint configuration.

   3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

   1. Remove excess sealant from surfaces adjacent to joints.

   2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.

   3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.

G. Acoustical Sealant Installation: At sound-rated assemblies and elsewhere as indicated, seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations.

3.4 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.6 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal non-traffic surfaces.

  1. Joint Locations:

    a. Joints between metal panels.

    b. Joints between different materials listed above.

    c. Perimeter joints between materials listed above and frames of doors, windows and louvers.

    d. Control and expansion joints in ceilings and other overhead surfaces.

    e. Other joints as indicated.

  2. Urethane Joint Sealant: Multicomponent, nonsag, Class 25.

  3. Joint-Sealant Color: Match Architect's samples.

B. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal non-traffic surfaces.

  1. Joint Locations:

    a. Control and expansion joints on exposed interior surfaces of exterior walls.

    b. Perimeter joints of exterior openings where indicated.

    c. Perimeter joints between interior wall surfaces and frames of interior doors and windows.

    d. Other joints as indicated.

  2. Joint Sealant: Multicomponent, nonsag, Class 25.

  3. Joint-Sealant Color: Match Architect's samples.

C. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Sealant Location:

    a. Joints between plumbing fixtures and adjoining walls, floors, and counters.

    b. Tile control and expansion joints where indicated.

    c. Other joints as indicated.

2. Joint Sealant: Mildew resistant, single component, acid curing, Silicone.

3. Joint-Sealant Color: Match Architect's samples.

END OF SECTION

SECTION 31 00 00

EARTHWORK

PART 1 - GENERAL

1.1 DESCRIPTION

A. Provide earthwork complete, including removal work and clearing, grading, excavating, soil treatment and fill, and dewatering.

B. Related work specified elsewhere includes:

1. Section 00 31 19 Existing Conditions
2. Section 00 31 32 Geotechnical Data
3. Section 01 11 00 Summary of Work
4. Section 01 45 00 Quality Control
5. Section 01 71 23 Field Engineering
6. Section 01 56 16 Dust Control
7. Section 01 56 19 Noise Control
8. Section 02 41 00 Site Preparation & Plant Protection
9. Section 31 25 00 Erosion Control
10. Section 32 11 13 Subgrade Preparation & Base Material
11. Section 32 13 13 Landscape Concrete
12. Section 32 31 13 Chain Link Fencing

1.2 QUALITY ASSURANCE

A. Qualifications

1. All general contractors, performing all sub base preparation, grading and drainage infrastructure work should be experienced in the installation of public site works for at least five (5) years. Failure to meet the requisite qualifications may result in the general contractors and sub-contractors being rejected as non-responsible.

B. Reference standards

1. Perform work in compliance with the rules and regulations of the Division of Industrial Safety and other local and State agencies having jurisdiction. Nothing contained herein shall be construed as permitting work that is contrary to such rules, regulations and codes.
2. Work shall conform to local codes and regulations.

3. References to "Standard Specifications" shall mean the Standard Specifications of the State of California, Business and Transportation Agency, Department of Transportation, CALTRANS.

4. ASTM Standards.

5. Perform all grading with hydraulically laser-controlled grading machinery.

6. The grading contractor shall visit the site prior to bidding the project.

7. The contractors shall always comply with the recommendations of the Geotechnical Engineer.

8. If unforeseen circumstances are encountered during the grading operations, the Construction Manager shall be contacted immediately for additional recommendations from the Geotechnical Engineer.

9. No deviations from the project specifications shall be made except upon written approval from the Geotechnical Engineer or Landscape Architect.

10. All existing surface and subsurface structures that will not be incorporated in the final development shall be removed prior to any grading operations.

1.3 SUBMITTALS, per General Conditions.

A. Submit a list of grading equipment to be used.

B. Submit an analysis of physical and chemical properties and certificate of compliance of environmental clearance for import soil, if any.

C. Before the grading operation is underway, submit a letter identifying the approximate quantities and type of soil required to be imported and exported in order to accomplish a balance of the earthwork materials without additional compensation.

1.4 TESTING

A. Testing and Inspection: Testing shall be performed by a qualified independent testing laboratory under the supervision of a registered professional engineer, specializing in soils engineering.

B. The Owner will direct, provide and pay for initial testing and inspection during earthwork operations.

C. Provide and pay for re-testing and inspection during earthwork operations. Laboratory and inspection service shall be acceptable to the Owner.

D. Where reference is made to relative compaction, it shall be the in-place dry density of soil expressed as a percentage of the maximum dry density of the same material, determined by the ASTM D1557 laboratory test procedure. Optimum moisture is the water content that corresponds to the maximum dry density.

E. For structural fills under footings, slabs or pavements, determine moisture-density relationships in accordance with ASTM D1557.

F. Plasticity Index: ASTM 4318-98.

1.5 PROJECT CONDITIONS

A. Protect excavations by shoring, bracing, sheeting, underpinning, or other methods as required to prevent cave-ins or loose dirt from entering excavations. Barricade open excavations and post warning lights at work adjacent to public streets and walks.

B. Underpin adjacent structure(s), including utility service lines, which may be damaged by excavation operations.

C. Promptly repair damage to adjacent facilities caused by earthwork operations. Cost of repair at Contractor's expense.

D. Promptly notify the Inspector of unexpected subsurface conditions.

1.6 FIELD QUALITY CONTROL

A. Contractor shall provide adequate notice, cooperate with, provide access to the work, and assist testing agency and their representatives in execution of their function.

B. The Soil Engineer shall be notified at least two days, prior to commencement of any grading operations so that he may coordinate the work in the field with the contractor.

C. When, during the progress of work, field tests indicate that installed compacted materials do not meet specified requirements, provide additional compaction until specified density is achieved, or remove and replace defective materials with new materials as directed by the Inspector. Cost of additional labor, materials, and testing to attain specified density at Contractor's expense.

1.7 EXISTING CONDITIONS

A. A topographic survey of the property has been included in the drawings for reference only. Upon beginning the earthwork, Contractor represents that he has inspected the site and satisfied himself as to actual grades and levels and the true conditions under which the work is to be performed.

1.8 SOILS REPORT

A. A soil investigation report has been prepared for the project. See Section 00 31 32, Geotechnical Data.

B. The report is available in the Project Manual for inspection by the Contractor. Unless otherwise specified, it is intended that all work be performed in accordance with the provisions of this report.

C. Drilled piers may encounter ground water. Excavations for drilled piers may require casings and installation of concrete by means of pumping under the direction of the Geotechnical Engineer.

1.9 SOILS BORINGS

A. Subsurface soils investigations have been made at the site and logs of the test holes are available with the Soils Report. Such investigations have been made for the purposes of design only, and neither the Landscape Architect, the Owner, nor the Soils Engineers guarantee adequacy or accuracy of the data, or that data are representative of all conditions to be encountered. Such information is made available for general information only and shall not relieve the Contractor of the responsibility for making his own investigations

1.10 PROTECTION

A. Furnish, place and maintain all supports, shoring and sheet piling which may be required for the sides of the excavation or for the protection of adjacent existing improvements.

B. Maintain all benchmarks, monuments, and other reference points. If disturbed or destroyed, replace as directed.

C. Adequate protection measures shall be provided to protect workmen, passers-by, and the site. Streets and adjacent property shall be fully protected throughout the operations.

D. In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for working conditions on the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours.

E. Any construction review of the Contractor's performance conducted by the Inspector is not intended to include review of the adequacy of the Contractor's safety measures in, on, or near the construction site.

F. Adjacent streets, sidewalks, and property shall be kept free of mud, dirt, or similar nuisances resulting from earthwork operations.

G. Provide for surface drainage during the period of construction in a manner to avoid creating a nuisance to adjacent areas.

H. Water as required to suppress dust nuisance.

I. Protection of Existing Improvements: Provide barricades, covering, or other types of protection necessary to prevent damage to existing improvements indicated to remain in place. Protect improvements on adjoining properties. Repair damaged existing improvements to original condition as approved by authority having jurisdiction.

J. Provide erosion control measures as required.

1.11 UTILITY TRENCHING

A. Contractor shall conduct operations and schedule cleanup in a manner to cause the least possible obstruction and inconvenience to traffic, pedestrians, and any adjacent property owners or tenants.

B. Contractor shall protect open excavations, trenches and such with covers, railings, and fences as required together with signs, lights, and other warning devices sufficient to protect and maintain safe pedestrian, bicycle, or vehicular traffic through the work.

C. Contractor shall conduct operations in such a manner that existing facilities and utilities that are to remain in place will not be damaged. Excavation, trenching and other work under or adjacent to existing pipelines, conduit runs, or structures of any kind, shall be prosecuted in such a manner as to not interfere with the safe operation and use of such installations. Contractor, at his expense, shall furnish and install sheet piling, cribbing, shoring, or whatever means may be necessary to adequately support material carrying such facilities or to support the facilities themselves and shall maintain such supports until they are no longer needed. The installation and removal of such supports shall be performed in a manner that does not disturb the line, grade or operation of the facilities or utilities being installed or adjacent to the installation. Should any damage to existing facilities or structures be incurred during the operations of the Contractor, he shall immediately notify the proper owners or authorities, and shall arrange for the immediate repair of the facilities at his own expense. Temporary pavements, facilities, utilities, and other installations shall also be protected until they are no longer required. When temporary supports and other protective means are no longer required, they shall be removed and disposed of by the Contractor.

D. During trenching operations, the Contractor shall furnish, install, and operate adequate pumps or other devices as may be necessary to remove any seepage, storm water, or sewage that may be encountered during the progress of the work. All excavations shall be kept free from water during bedding, pipe laying, backfilling and when concrete is being placed, and thereafter until such water will do no damage to the work.

E. Damage resulting from movement of the sides or bottom of trenches or other excavations, whether sides are braced or not, and any portions of the area and work affected by such movement, shall be repaired or restored by the Contractor at his expense to the satisfaction of the Geotechnical Consultant and the Owner.

F. Contractor shall protect all existing facilities.

PART 2 - MATERIALS

2.1 FILL

A. Structural Fill Materials: Inert subsoil material free of organic matter, rubbish, debris and rocks greater than 3" diameter, and meeting the following requirements:

1. Plastic index of not more than 12 - ASTM D424.
2. Resistance R-Value: Not less than 25.
3. Liquid Limit: 30% or less.
4. Expansion Index: 20% or less.
5. Percent Passing #200 Sieve: between 10 and 20%.
6. Minimum laboratory dry weight at optimum moisture content of 110 pounds per cubic foot.
7. Fill soil to be used under planting areas shall be capable of sustaining healthy plant life and shall have a pH value of between 6.0 and 7.5, a boron concentration of the saturation extract of less than 1 ppm, salinity of the saturation extract at 25 degrees C of less than 4.0 millimoles, and a Sodium Absorption Rate (SAR) of less than 8.
8. Provide imported fill material as required to complete the work. Obtain rights and pay all cost for imported materials.
9. Proposed fill material shall be inspected, tested, and laboratory report issued prior to use in the work.
10. Suitable excavated material removed to accommodate new construction may be used as fill material subject to inspection and approval.
11. All fill material is subject to testing and inspection.

2.2 TOPSOIL

A. Topsoil is defined as on-site surface soil. Satisfactory topsoil shall be free of subsoil, clay, lumps, stones and other objects over 1" in diameter, and without weeds, roots and other objectionable material.

B. If herbicide contamination is suspected, then a radish/ryegrass growth trial must be performed. Consult with Inspector prior to decision to test or not.

C. Herbicide contamination is suspected in areas of topsoil that show no or poor of vegetative ground cover or grass. Do not use topsoil from these areas for use in the planting areas.

2.3 UTILITY TRENCH BACKFILL

A. Sand bedding, native soil and permeable material per Section 33 40 10, Storm Drainage.

2.4 CLASS 2 AGGREGATE BASEROCK

A. Class 2 aggregate baserock should have an R-value of at least 78 and conform to the requirements of Section 26-1.02A of the State of California, CALTRANS Standard Specifications, latest edition.

2.5 CLASS 2 PERMEABLE ROCK

A. Class 2 permeable rock should have an R-value of at least 78 and conform to the requirements of Section 68 of the State of California, CALTRANS Standard Specifications, latest edition.

PART 3 - EXECUTION

3.1 PREPARATION

A. Establish extent of grading and excavation by area and elevation. Designate and identify datum elevation and project engineering reference points. Set required lines, levels and elevations.

B. Do not cover or enclose work of this Section before obtaining required inspections, tests, approvals and location recording.

3.2 EXISTING UTILITIES

A. Notify the Underground Service Alert (U.S.A.) Center 48 hours in advance of performing any excavation work by calling 811. Verify the grade and location of existing utilities prior to any work where conflicts may arise by careful hand digging. Be responsible for the protection of all existing utilities. Be responsible for the protection of all existing survey monuments.

B. Before starting grading and excavation, establish the location and extent of underground utilities in the work area. Exercise care to protect existing utilities during earthwork operations. Perform excavation work near utilities by hand and provide necessary shoring, sheeting and supports as the work progresses.

C. Maintain, protect, relocate, or extend as required, existing utility lines which pass through the work area. Pay costs for this work, except as covered by the applicable utility companies.

D. Protect active utility services uncovered by excavation.

E. Remove abandoned utility service lines from areas of excavation. Cap, plug or seal abandoned lines and identify termination points at grade level with markers.

F. Accurately locate and record abandoned and active utility lines rerouted or extended on project record documents.

G. The holes, left by the removal of subsurface structures shall be cleaned of all debris, backfilled with clean on site soil, and compacted to not less than 90% relative compaction, using ASTM D1557 test procedure. This backfill must be structural fill and the operation must be conducted under the supervision of the Soil Engineer.

3.3 STRIPPING AND SITE PREPARATION FOR PAVED AREAS

A. The improvement areas should then be stripped to a sufficient depth to remove any remaining organic laden topsoil. Any areas of loose or soft materials or undocumented fills that are exposed during the grading should also be removed or re-compacted, as directed by the geotechnical engineer.

B. Holes resulting from the removal of underground obstructions (such as old foundations, abandoned utilities or tree root bulbs) that extend below the planned finished grade should be cleared of loose soil and debris, then backfilled with suitable material compacted to the requirements for engineered fill.

C. The subgrade should be ripped and cross ripped a minimum depth of 12 inches and statically rolled with a heavy, smooth drum roller to provide a smooth firm surface. Any unstable or pumping subgrade areas should be ripped and cross ripped a minimum depth of 12 inches, or subexcavated, plugged with baserock and overlain with a stabilizing fabric such as Mirafi 600X Fabric installation should be performed in accordance with the manufacturer's recommendations. The method and extent of any required preparation work should be evaluated by the geotechnical engineer.

3.4 FILL PLACEMENT AND COMPACTION FOR PAVEMENTS

A. Existing soils having an organic content of less than three percent by volume, and which are free of construction debris, can be used as engineered fill. Fill material should not, however, contain rocks or lumps greater than six inches in greatest dimension with not more than 15 percent larger than 2.5 inches. Imported fill used to raise grades should be predominantly granular with a maximum plasticity index of 12.

B. Engineered fill should be compacted to at least 90 percent relative compaction, as determined by ASTM Test Designation DI557. Fill material should be spread and compacted in lifts not exceeding eight inches in uncompacted thickness. The moisture content of both on-site and imported soils utilized as fill should be adjusted at least two percent above their optimum moisture content.

C. In order to achieve satisfactory compaction in the subgrade and fill soils, it may be necessary to adjust the soil moisture content at the time of soil reworking. This may require that water be added and thoroughly mixed into any soils which are too dry or that scarification and aeration be performed in any soils which are too wet. The subgrade will require rescarification and recompaction if it is allowed to dry out and crack prior to placing the required non-expansive material section.

3.5 SLOPE GRADIENTS AND FILL PLACEMENT OVER EXISTING SLOPES

A. New permanent cut slopes, and any fill slopes, should be no steeper than 3:1 (horizontal to vertical). Fill placed on slopes steeper than 6:1 (horizontal to vertical) should be benched a minimum of two feet horizontally for every two vertical feet of new fill. Any undocumented fill material encountered in new slope construction should be removed and replaced as properly engineered fill

3.6 TEMPORARY CUTSLOPES AND SHORING

A. Temporary slope excavations for the walls in the soils encountered during the site investigation are anticipated to be reasonably stable at an inclination of 1.5:1 (horizontal to vertical), and should be benched every five feet vertical.

B. There are a number of factors which can influence the stability of temporary excavations, some of which the contractor can control. The contractor, therefore, should be solely responsible for designing and constructing stable temporary excavations and should shore, slope or bench the excavations as required to maintain their stability and comply with all applicable safety standards, including CAL-OSHA requirements. The temporary shoring system design and performance should be the responsibility of the contractor.

3.7 UTILITY TRENCHES

A. The presently available subsurface information indicates that the required utility trenches can be excavated with conventional and/or heavy-duty backhoe equipment. Trenches deeper than five feet should be properly braced or sloped in accordance with the current requirements of CAL-OSHA or the local governmental agency, whichever is more stringent.

B. Utility trenches should be backfilled with engineered fill placed in lifts not exceeding eight inches in uncompacted thickness, except thicker lifts may be used with the approval of the soil engineer provided satisfactory compaction is achieved. If on-site soil is used, the material should be compacted to at least 90 percent relative compaction by mechanical means only. Imported sand can also be used for backfilling trenches provided it is compacted to at least 90 percent relative compaction. In building, slab, and pavement areas, the upper three feet of trench backfill should be compacted to at least 90 percent relative compaction for on-site soils, and 95 percent where imported clean sand backfill is used. In addition, the upper six inches of all trench backfill materials under pavement areas should be compacted to at least 95 percent relative compaction.

C. Water jetting to achieve the required level of backfill compaction should not be permitted.

3.8 SURFACE DRAINAGE

A. Positive surface gradients should be maintained on new surfaces to prevent ponding of water.

3.9 CONSTRUCTION OBSERVATION

A. Grading and earthwork should be observed and tested by the geotechnical engineer for conformance with the project plans/specifications and the geotechnical engineer recommendations. This work includes site preparation, selection of satisfactory fill materials, and placement and compaction of the sub grades and fills. Sufficient notification prior to commencement of earthwork is essential to make certain that the work will be properly observed.

3.11 SITE GRADING

A. Perform grading with in contract limits, including adjacent transition areas, to new elevations, levels, profiles and contours indicated. Provide subgrade surfaces parallel to finished surface grades. Provide uniform levels and slopes between new elevations and existing grades.

B. Grade surfaces to assure areas drain away from structures and to prevent ponding and pockets of surface drainage. Provide subgrade surfaces free from irregular surface changes and as follows:

  1. Rough Grading: Plus or minus 0.10 ft. subgrade tolerance. Finish required will be that ordinarily obtained from a laser controlled blade-grader or scraper operations.

  2. Provide subgrade surface free of exposed boulders or stones exceeding 3" in greatest dimension in paved areas.

  3. Granular Base: Grade subgrade surface smooth and even, free of voids to the required subgrade elevation. Provide compacted subgrade suitable to receive granular base materials. Tolerance 1/2" in 10'-0". Refer to Section 32 11 13 and for Subgrade Preparation and Base Material.

  4. Drainage Swales: Grade as shown on drawings.

3.12 EXCAVATING

A. Excavate for structures to elevations and dimensions shown. Extend excavation a sufficient distance from foundations to permit placing and removal of formwork, installation of materials, services and inspection. Hand trim foundation excavations to final grade just before concrete is placed. Remove loose, soft materials, and all organic matter. Footings shall bear on approved undisturbed bearing soil.

B. Obtain inspection and testing of foundation excavations by Inspector before base rock is placed.

C. Excavate for structures and paving to cross-sections, elevations and grades indicated. Allow for base material.

D. Extra Excavation: Excavate unsatisfactory soil materials extending below required elevations to depth as directed. Such extra excavation will be paid for as a change in work. Obtain Construction Manager’s written authorization before performing extra excavation work.

E. Unauthorized Excavation: Backfill and fill all overexcavation to proper grades. Fill overexcavation at footings with 1,500 psi concrete. Additional labor and material for unauthorized excavation and remedial work at Contractor's expense.

F. Shore, sheet or brace excavations as required to maintain them secure. Remove shoring and bracing as backfilling progresses, when banks are safe against caving.

G. Do not excavate footings or slabs to the full depth when freezing temperature may be expected, unless footings or slabs are placed immediately after the excavation has been completed. Protect excavation bottoms from freezing when the placing of concrete is delayed.

H. Rock Excavating:

  1. Rock: Material which cannot be removed with 3/4 cu. yd. capacity power shovel without drilling or solid boulders with a volume of more than 1/2 cu. yd.

  2. Rock Excavation: Material excavation of buried boulders and rock in excess of 1/2 cu. yd. that requires continuous systematic drilling or continuous use of ripper or other special equipment. All other excavation shall be classified as earth excavation.

3. Contractor will be paid cost of rock excavation as a change in work. Obtain Inspector's written authorization prior to performing rock excavation work.

3.14 DRAINAGE

A. Provide necessary pumps and drainage lines and maintain excavations, including footings and pits, free from water (ice and snow) during excavating and subsequent work operations.

B. Provide drainage of the working area at all times.

3.15 FILLING, BACKFILLING AND COMPACTING

A. Obtain inspection and approval of subgrade surfaces by Inspector prior to filling operations. Scarify, dry and compact soft and wet areas; remove and replace unsuitable subgrade materials with an approved compacted fill material. Take corrective measures before placing fill materials.

B. No fill placement shall be made without the approval of the Geotechnical Engineer.

C. For voids resulting from the removal of existing subsurface pipes and structures, the bottom of the excavation shall be scarified to a depth of 12 inches (if required), moisture conditioned and then compacted to a minimum of 90% relative compaction. Additional fill material placed in the trenches shall be benched into the supporting material (to minimize differential settlement) with 2:1 criteria (horizontal to vertical) and compacted a minimum of 90% relative compaction.

D. Subgrade Preparation for paving:

1. Topsoil is not permitted as fill or backfill material under paved areas. Remove existing topsoil to the complete satisfaction of the Geotechnical Engineer. Fill holes with approved backfill satisfaction of the Geotechnical Engineer.

3. Prepare subgrade free of any depressions, voids and irregularities to achieve a uniform condition as required and compacted a minimum of 90% relative compaction.

4. If additional fill is required, spread approved engineered fill material uniformly in layers not greater than 8" of loose thickness over entire fill area prior to compaction.

6. Lift thickness requirements may be modified by Inspector to suit equipment and materials or other conditions when required to assure satisfactory compaction.

7. Moisture-condition fill material by aerating or watering and thoroughly mix material to obtain moisture content permitting proper compaction.

8. Place and compact each layer of fill to indicated density before placing additional fill material. Repeat filling until proposed grade, profile or contour is attained.

9. Suspend fill operations when satisfactory results cannot be obtained because of environmental or other unsatisfactory site conditions. Do not use muddy (or frozen) fill materials. Do not place fill material on muddy (or frozen) subgrade surface.

10. Maintain surface conditions which permit adequate drainage of rainwater and prevent ponding of surface water in pockets. When fill placement is interrupted

by rain, remove wet surface materials or permit to dry before placing additional fill material.

E. Place backfill materials in uniform layers not greater than 8" loose thickness over entire backfill area.

1. Use hand tampers at foundation retaining walls and similar locations. Do not use large rolling equipment adjacent to retaining walls.

2. Do not backfill against retaining walls until walls for bearing surfaces have reached design strength or are properly braced, and backfilling operations approved. Provide clean backfill materials or granular materials as required. Compact in maximum 8" layers.

F. Fill all areas of settlement to proper grade before subsequent construction operations are performed.

G. Compaction under paved areas:

1. Provide minimum and maximum compaction control for all fill and backfill.

2. Engineered Fill

a. Compact top 12" of subgrade and each layer of engineered fill or backfill material at paved area to 90% relative compaction. Extend compaction at t least 3'-0" beyond paved area, structures, slabs and pavements.

b. Compact top 12" of subgrade and each layer of engineered fill or backfill material at foundations, slabs-on-grade, retaining walls, concrete borders, mow bands, curbs, valley gutters, trench drains, concrete, asphalt, and paved areas to 90% relative compaction. Extend compaction at least 5'-0" at both sides of foundations and retaining walls and at least 3'-0" beyond slabs-on-grade and paving.

3. Water settling, puddling and jetting of fill and backfill materials as a compaction method is not acceptable.

4. Maintain moisture content of materials during compaction operations within required moisture range to obtain indicated compaction density.

5. Provide proper equipment to achieve consistent and uniform compaction of fill and backfill materials.

H. Maintenance of Finish Grades:

1. Protect finish graded areas from traffic and erosion. Keep free of trash and debris. Repair and re-establish grades in settled, eroded and damaged areas.

2. Where completed areas are disturbed by construction operations or adverse weather, scarify, reshape and compact or scarify to achieve required density.

3.16 FIELD QUALITY CONTROL

A. The owner will provide and pay for field quality control soils testing and inspection during earthwork operations. Provide a minimum of 48 hours’ notice.

B. Contractor shall provide adequate notice, cooperate with, provide access to the work, obtain samples, and assist testing agency and their representatives in execution of their function.

C. Fill Materials: The owner will test proposed materials to verify suitability for use, gradation of material, moisture-density relation, design bearing value, and percent of organic materials.

D. Subgrade Surfaces: Based on visual examination at the site, the owner will provide and pay for bearing tests as required to verify subgrade surfaces are adequate and meet or exceed design bearing values.

   1. Paved Areas: Make at least one test for each 2,000 sq. ft. of paved area.

E. Compaction Operations: The owner will provide and pay for inspection and testing during paved area filling and compaction operations. Test each lift of fill to verify compaction meets specified requirements. The owner will provide and pay for periodic inspection and testing during site area filling and compaction operations.

F. When, during progress of work, field tests indicate that installed compacted materials do not meet specified requirements, provide additional compaction until specified density is achieved, or remove and replace defective materials with new materials as directed by the Inspector. Cost of additional labor, materials, and testing to attain specified density is at Contractor's expense.

3.17 TRENCHING AND EXCAVATION

A. Where utility trenches are required in existing asphalt concrete or Portland cement concrete roadways, the existing asphalt concrete or Portland cement concrete shall be full depth sawcut a minimum of 12" beyond the edge of the trench, unless otherwise directed by the Construction Manager.

B. Trenches may be excavated either by hand, or by machine. For gravity systems, excavation shall begin at the outlet end and proceed upgrade. Trench sides shall be parallel to and at equal distance from the centerline of the pipe.

C. Pipe trenches shall be excavated below the bottom of the pipe to provide for pipe bedding material.

D. Where a trench has been excavated below the designed grade, the bottom of the trench shall be refilled with approved bedding material, compacted in place in an approved manner and to the satisfaction of the Geotechnical Consultant and the Construction Manager at no additional cost to the Owner.

E. Trenches shall not be left open overnight in existing public street areas. In other areas the Geotechnical Consultant and the Construction Manager shall have the right to limit the amount of trench which is opened or partially opened at any one time, and also to limit the amount of trench left without backfill, at any one time.

F. The bottom of trenches shall be free of loose material at the bottom of the trenches compacted and tested by the assigned Field Engineer to a minimum of 90% relative compaction, prior to placement of the liner or pipes in the trenches.

3.18 CONTROL OF GROUND WATER

A. Contractor shall be solely responsible for dewatering trenches and excavations and subsequent control of ground water. Contractor shall provide and maintain such pumps or other equipment as may be necessary to control ground water and seepage until backfilling is completed.

3.19 BRACING AND SHORING

A. All work shall be in conformance with California and Federal OSHA requirements.

B. The Contractor shall furnish, place, and maintain such bracing and shoring as may be required to support the sides of the excavations for the proper protection of workmen; to facilitate the work; to prevent damage to the pipes and appurtenances being constructed; and to prevent damage to adjacent structures or facilities. Upon completion of the work, all bracing and shoring shall be removed.

C. The Contractor shall be solely responsible for all bracing and shoring for excavations five feet or more in depth, and shall, if requested by the Project Inspector, submit details and calculations to the Project Inspector for an adequate shoring system. The Project Inspector may forward the submittal to the Geotechnical Engineer, the Construction Manager and/or the California Division of Industrial Safety for their review. The Contractor's submittal shall include the basic design, assumed soils conditions, and estimation of forces to be resisted, together with plans and specifications of the materials and methods to be used, and shall be prepared by a Civil Engineer or Structural Engineer registered in California. No excavations in trench section or around structures shall precede a response to the submittal by the Project Inspector.

D. The Contractor is solely responsible for installing and extracting the shoring in a manner, which will not disturb the line, grade, compaction, or operation of the utility being installed or adjacent utilities and facilities.

3.20 PIPE BEDDING

A. Bedding material, from bottom of trench to bottom of pipe, shall be accurately shaped to the line and grade called for on the plans. Bedding material shall be carefully placed and compacted under the haunches of the pipe. Bedding material shall be compacted to at least 90 percent relative compaction. Jetting or ponding of bedding material will not be permitted.

B. Upon completion of bedding operations and prior to the installation of pipe, Contractor shall notify the Geotechnical Engineer, who will then inspect the bedding layer. Pipe laying shall not commence until the Geotechnical Engineer and the Project Inspector representative have approved the bedding.

3.21 BACKFILLING

A. Initial backfill, from top of bedding to 12” above top of pipe, shall be carefully brought up simultaneously on both sides of the pipe, so as to prevent any displacement of the pipe from its true alignment. Initial backfill shall continue to be carefully placed and compacted under the haunches of the pipe. The initial backfill shall be compacted in layers not more than eight (8) inches in uncompacted thickness and in a manner that will preclude moving the pipe. Compaction shall be to at least 90 percent relative compaction. Jetting or ponding of backfill material will not be permitted.

B. Subsequent backfill, from top of initial backfill to pavement structural section subgrade, shall be placed in loose lifts not exceeding eight (8) inches in thickness before compaction, and compacted by the use of pneumatic tampers or other mechanical means approved by the Geotechnical Engineer. Each layer shall be moisture conditioned to 2 to 5 percent of optimum moisture content. Compaction equipment or methods that produce horizontal or vertical earth pressures that may cause excessive displacement or may damage the pipeline will not be permitted. Lifts of subsequent backfill material shall be compacted to 90 percent relative compaction, except that in planted areas compaction may be reduced to 85% of relative compaction. Jetting or ponding of backfill material will not be permitted.

C. Utility backfill shall be inspected and tested by the Geotechnical Engineer during placement. Contractor shall cooperate with the Geotechnical Engineer and shall provide working space for such tests in his operations. Backfill not compacted in accordance with these specifications shall be recompacted or removed as necessary and replaced to meet the specified requirements, all to the satisfaction of the Geotechnical Engineer and the Project Inspector, prior to proceeding with the Work.

3.22 DUST ALLEVIATION AND CONTROL

A. Contractor shall be responsible for and shall provide pollution and dust abatement and control measures satisfactory to the Project Inspector continuously during the course of the work.

3.23 DISPOSAL OF WASTE MATERIALS

A. Perform work in accordance to Section 7, 1.13 “Disposal of Materials Outside the Highway Right of Way” of the Standard Specifications.

B. Stockpile, haul from site, and legally dispose of export and waste materials, including trash, excess soil and debris.

C. Maintain disposal route clear, clean and free of debris.

D. Clean excess soil may be distributed on site as accepted by the Geotechnical Engineer, if it does not adversely affect specified finish grades. Coordinate with Drawings and Section 32 11 13, Subgrade Preparation & Base Material Section 32 11 14 and 32 11 15.

E. Excess soil may need to be legally disposed of off-site. Refer to Section 00 31 19, Existing Conditions. Coordinate with Drawings and Section 32 11 13 Subgrade Preparation & Base Material, Section 32 11 14, and 32 11 15.

3.24 CLEANUP

A. Upon completion of utility earthwork all lines, manholes, catch basins, inlets, utility boxes and other structures shall be thoroughly cleaned of dirt, rubbish, debris, and obstructions of any kind. The entire work site shall be cleaned of all waste, rubbish, and construction debris of any nature.

B. Other surplus materials, including soil, remaining upon completion of the work shall become the property of the Contractor unless otherwise specified herein or noted on the plans, and shall be removed from the work site by the Contractor and disposed of outside the project limits in a lawful manner.

C. Upon completion of earthwork operation, clean areas within contract limits, remove tools and equipment. Provide a clear, clean site, free of debris and suitable for site work operations.

3.25 CLOSEOUT, per General Conditions.

A. The Contractor shall engage a California Registered Civil Engineer or licensed Land Surveyor to perform a conformance survey at completion of the project and provide a hard copy of the survey and an AutoCAD copy of the survey as part of the closeout documents.

END OF SECTION

SECTION 31 25 00

EROSION CONTROL

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. General: Provide all materials, equipment, and labor necessary to place and maintain straw wattle barriers and other erosion control measures and supplement with additional straw wattle barriers and other erosion control measures as required. Before completion of the project remove or modify straw wattle barriers and other erosion control measures that are no longer required to be in place. Verify extent of removal and modification with Landscape Architect beforehand.

B. Permit: The District will be responsible for hiring a third party consultant who will prepare a Storm Water Pollution Prevention Plan (SWPPP) and file a Notice of Intent (NOI) tailored to the Contractor's operations, methods, and equipment and comply with State Water Resources Control Board, the City of San Anselmo and the County of Marin requirements.

C. The District will be responsible for hiring a third party consultant to do the turbidity test, as well as prepare and file all necessary certifications. The District, or “owner”, will pay all necessary fees required for certification.

D. The contractor is required to implement Best Management Practices, and to provide all materials, equipment, and labor necessary to place and maintain straw wattle barriers and other erosion and pollution control measures as required.

E. The name of the person responsible for the daily maintenance of these facilities shall be on record along with a phone number where they can be reached 24 hours a day with the District. These facilities shall control and contain erosion-caused silt deposits and provide for the safe discharge of silt-free storm water into existing storm drain facilities. Design of these must be approved and updated each year prior to September 30.

1.2 SUMMARY

A. This Section includes the following:

1. Permanent and temporary erosion control.

B. Related Sections include the following:

1. Section 01 11 00 Summary of Work
2. Section 31 00 00 Earthwork.
3. Section 32 11 13 Subgrade Preparation and Base Material
4. Section 33 40 10 Storm Drainage

1.3 QUALITY ASSURANCE

A. General: Comply with governing codes and regulations.

1. Perform all work in accordance with all applicable laws, codes and regulations required by the State of California, City of San Anselmo and the County of Marin.

1.4 SUBMITTALS, per General Conditions

A. Submit a list of materials with manufacturer's product literature, installation instructions and specifications to be used.

B. Before the grading operation is underway, submit a letter identifying the approximate quantities and type of soil required to be imported and exported in order to accomplish a balance of the earthwork materials without additional compensation.

1.5 PROJECT CONDITIONS

A. Coordination: Coordinate this work with the work of other Sections to avoid delay and interference with other work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Straw Wattles: Straw Wattles shall be manufactured from rice straw and be wrapped in a tubular plastic netting. The netting shall have a strand thickness of 0.03 inch, and a knot thickness of 0.055 and a weight of 0.35 ounce per foot (each +/- 10%) and shall be made from 85% high-density polyethylene, 14% ethyl vinyl acetate and 1% color for UV inhibition. Straw Wattles shall be nine inches in diameter (+/- one inch), twenty-five feet long (+/- 0.5 feet) and weigh approximately 35 pounds (+/- 10%).

B. Fiber rolls shall conform to the details shown on the Drawings and to the Specifications.

C. Stakes shall be fir or pine and shall be a minimum of one-inch x one-inch (nominal) and 18 inches in length.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Water Pollution Control Program: The Program shall be provided by the Contractor. The Contractor shall as a minimum address:

1. Cut and fill operations.
2. Temporary stockpiles.
3. Vehicle and equipment storage, maintenance, and fueling operations. Coordinate truck routes with Construction Manager.
4. Concrete disposal.
5. Dust control.
6. Noise control.
7. Tracking of dirt, mud on off-site streets and on school property.
8. Pipe flushing.
9. Protection of adjacent drainage systems from damage due to the operations of this project.

B. Straw Wattles: Straw Wattles shall be installed as shown on the drawings and according to manufacturer's specifications. Individual rolls shall be placed with adjacent ends butted firmly to each other to create a continuous linear roll. They shall be placed on contour and staked with 18 or 24-inch wood stakes at four feet on center. Drive stakes to a depth of approximately two-inches above the roll. The ends of adjacent Straw Wattles shall be abutted to each other snugly. Construct furrows at a slight angle to the slope contour shown on the plans, to a depth of 3 inches, and at a sufficient width to hold the fiber rolls.

3.2 SWPPP AND MONITORING PROGRAM CHECKLIST (USE AS APPLICABLE)

SECTION A: STORM WATER POLLUTION PREVENTION PLAN (SWPPP)				
CHECK IF ADDRESSED N/A IF NOT APPLICABLE	**SWPPP Section**	**ITEM**	**GENERAL PERMIT REF.**	**COMMENTS IMPLEMENTATION DATE**
		Site History (narrative; if possible, indicate location(s) on the Water Pollution Control Drawings)		
		Nature of fill material and data describing the soil. Description of toxic materials treated, stored, disposed, spilled or leaked on site		
		BMPs that minimize contact of contaminants with storm water		
		Location of Areas Designated for:		
		Vehicle storage & service		
		Equipment storage, cleaning, maintenance		
		Soil or waste storage		
		Construction material loading, unloading, storage and access		
		Areas outside of Owners right-of-way (yards, borrow areas, etc.)		
		BMP Locations or Descriptions for:		
		Waste handling and disposal areas		
		On-site storage and disposal of construction materials and waste		
		Minimum exposure of storm water to construction materials, equipment, vehicles, waste		
		Post Construction BMPs		
		Listing or Description of Post-construction BMPs		
		Location of post-construction BMPs		
		Parties responsible for long-term maintenance		

		Additional Information		
		Description of other pollutant sources and BMPs		
		Pre-construction control practices		
		Inventory of materials and activities that may pollute storm water		
		BMPs to reduce/eliminate potential pollutants listed in the inventory		
		Runoff coefficient (before & after)		
		Percent impervious (before & after)		
		Copy of the NOC		
		Construction activity schedule		
		Contact information		
		SOIL STABILIZATION (EROSION CONTROL)		
		The SWPPP shall include:		
		Areas of vegetation on site		
		Areas of soil disturbance that will be stabilized during rainy season		
		Areas of soil disturbance which will be exposed during any part of the rainy season		
		Implementation schedule for erosion control measures		
		BMPs for erosion control		
		BMPs to control wind erosion		
		SEDIMENT CONTROL		
		Description/Illustration of BMPs to prevent increase of sediment load in discharge		
		Implementation schedule for sediment control measures		
		BMPs to control sediment tracking		
		NON-STORM WATER MANAGEMENT		
		Description of non-storm water discharges to receiving waters		
		Locations of discharges		
		Description of BMPs		
		Name and phone number of person responsible for non-storm water management		
		POST-CONSTRUCTION		
		Description of post-construction BMPs		
		Operation/Maintenance of BMPs after project completion (including short-term funding, long-term funding and responsible party)		

		MAINTENANCE, INSPECTIONS, AND REPAIR		
		Name and phone number of person(s) responsible for inspections		
		Complete inspection checklist: date, weather, inadequate BMPs, visual observations of BMPs, corrective action, inspector’s name, title, signature		
		OTHER REQUIREMENTS		
		Documentation of all training		
		List of Contractors/Subcontractors		
SECTION B: MONITORING AND REPORTING REQUIREMENTS				
CHECK IF ADDRESSED N/A IF NOT APPLICABLE	**SWPPP Section**	**ITEM**	**GENERAL PERMIT REF.**	**COMMENTS IMPLEMENTATION DATE**
	600.1	Description of Site Inspection Plans		
	100.3	Compliance certification (annually 6/15)		
	600.2	Discharge reporting		
	600.3	Keep records of all inspections, compliance certifications, and noncompliance reports on site for a period of at least three years		
	600.4	Sampling and Analysis Plan for Sediment		
	600.5	Sampling and Analysis Plan for Non-Visible Pollutants		
SECTION C: STANDARD PROVISIONS FOR CONSTRUCTION ACTIVITIES				
CHECK IF ADDRESSED N/A IF NOT APPLICABLE	**SWPPP Section**	**ITEM**	**GENERAL PERMIT REF.**	**COMMENTS IMPLEMENTATION DATE**
	100.1	Signed SWPPP Certification		

3.3 MAINTENANCE AND REMOVAL

A. General: Maintain and repair erosion control facilities throughout the construction period. Remove silt buildup at straw wattles as needed. Repair damage to earth slopes and banks.

B. Before completion of the project remove or modify straw wattle barriers and other erosion control measures that are no longer required to be in place. Verify extent of removal and modification with Construction Manager beforehand.

C. Cleaning: Keep area clean of debris.

END OF SECTION

SECTION 31 63 29

DRILLED PIERS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. This specification covers requirements for drilled pier construction.

B. The provisions of this specification shall govern unless otherwise specified in the contract documents. In case of conflicting requirements, the contract documents shall govern.

1.2 RELATED WORK

A. Section 00 31 32 Geotechnical Data

B. Section 12 93 05 Site Furnishings

C. Section 26 00 10 General Electrical Requirements

D. Section 32 11 13 Subgrade Preparation and Base Material

E. Section 32 13 13 Site Concrete

F. Section 32 31 13 Chain Link Fencing

1.3 REFERENCES

A. ASTM Standards (Latest Edition)

A82 – Standard specification for cold dawn steel wire for concrete reinforcement.

A615 – Standard specification for deformed and plain billet-steel bars for concrete reinforcement.

C33 – Concrete Aggregates.

C39 – Standard Specification for Compressive Strength of Cylindrical Concrete Specimens.

C94 – Ready Mixed Concrete.

C150 – Portland Cement.

E329 – Standard Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction

B. ACI Standards

301 – Specifications for Structural Concrete for Buildings.

318 – Building Code Requirements for Reinforced Concrete.

C. AWS Standards

01.1– Structural Welding Code.

012.1 – Reinforcing Steel Welding Code.

A5.1- Mild Steel Covered Arc-Welding Electrodes

D1.4- Reinforcing Steel Welding Code

D. ICBO International Conference of Building Officials

CBC- California Building Code

1.4 QUALITY ASSURANCE

A. Testing and inspection services will be retained by the owner at his own expense except that when tests or inspections reveal failure of materials to meet Contract requirements, costs for subsequent tests and inspections will be deducted from moneys due to Contractor. Excessive inspection time required by Contractor's failure to provide sufficient workmen or to properly pursue the progress of the work shall likewise be deducted from moneys due to the Contractor.

1. Geotechnical Engineer: Will observe all phases of drilled pier construction.

   Drilling of piers. Final pier depths will be determined and recorded by the Geotechnical Engineer prior to placing concrete. Prior to placing concrete, bottom of each pier will be inspected by Geotechnical Engineer to ensure that proper conditions existing to permit the placement of concrete. No concrete shall be placed until each hole and it's reinforcing steel have been observed and approved. Contractor shall notify the Geotechnical Engineer at least two (2) working days prior to commencing operations to allow for proper scheduling of construction observation.

2. Testing Laboratory: Will provide services conforming to the requirements of ASTM D329, for sampling, testing, inspection, and reporting with respect to reinforcing and concrete.

   One set of four cylinders per day of operation but not less than required by ACI 318 and CBC section 1903A & 1905A. Test one sample at 7 days and two at 28 days; keep one sample in reserve for testing in the event of a low break.

3. Surveyor: Contractor shall provide the services of a qualified surveyor for performing all surveys and layouts and to determine vertical and horizontal alignments. Contractor shall protect reinforcing steel from contamination.

1.5 SOILS REPORT

A. A soil investigation report has been prepared for the project. See Section 00 31 32, Geotechnical Data.

B. The report is available in the office of the Landscape Architect and the Construction Manager for inspection by the Contractor. Unless otherwise specified, it is intended that all work be performed in accordance with the provisions of these reports.

C. Drilled piers may encounter ground water. Excavations for drilled piers may require casings and installation of concrete by means of pumping under the direction of the Geotechnical Engineer.

1.6 SOILS BORINGS

A. Subsurface soils investigations have been made at the site and logs of the test holes are available with the Soils Report. Such investigations have been made for the purposes of design only, and neither the Landscape Architect, the Owner, nor the Soils Engineers guarantee adequacy or accuracy of the data, or that data are representative of all conditions to be encountered. Such information is made available for general information only and shall not relieve the Contractor of the responsibility for making his own investigations

1.7 SUBMITTALS

Contractor shall submit the following:

A. List of products to be used.

B. Concrete Mix designs

C. Reinforcing steel shop drawings.

  1. Fully detailed Shop Drawings for pier reinforcement shall be submitted to the Architect for review. Shop Drawings shall show placing and details, and size, spacing and location of reinforcing steel.

  2. Reinforcing steel shall not be fabricated or placed before the Shop Drawings have been reviewed by the Architect and returned to the Contractor. Review of Shop Drawings by the Architect will not relieve the Contractor of responsibility for errors or for failure in accuracy and complete placing of the work.

D. Certified mill test reports for reinforcing steel.

E. Evidence that proposed materials and mix designs conform to all requirements of “Specifications for structural Concrete for Buildings (ACI 301)”, except as modified by these specifications.

F. Details procedures for casing removal, if any.

G. Detailed procedures for tremie concrete, if any.

H. Notification to Engineer to permit in-place inspection of reinforcing steel prior to placing concrete.

I. Reports of actual location, alignment, elevations, and dimensions of drilled piers.

J. Reports of material quantities.

  1. Submit ticket for each batch of concrete delivered to job site. Ticket shall bear the following information:

    a. Design Mix Number.

    b. Signature or initials of ready mix representative.

1.8 CONSTRUCTION TOLERANCES

A. Maximum permissible variation of location – 1/24th of shaft diameter or 3 inches, whichever is less.

B. Pier and reinforcing cage, as set, shall not vary from a straight line drawn between the center of the pier hole at the top and at the bottom by more than 3” at any point.

C. Concrete shafts out of plumb. Not more than 1.5 percent of the length nor exceeding 12.5 percent of shaft diameter or 15 inches, whichever is less.

D. Concrete Cover on Reinforcing Steel: Clear distance between reinforcing steel and the pier hole sidewall shall not be less than 3”.

E. Projecting reinforcing steel and anchor bolts shall be set by template and firmly anchored. Allowable deviation shall be +/- ¼”

F. Concrete cutoff elevation tolerances – plus 1 inch to minus 3 inches.

G. Hole diameter: Diameters shall be as shown on Drawings for each individual pier. Diameters shown shall be the diameter of the drilling bucket or auger bit.

H. If the tolerances above are exceeded, furnish and pay for corrective design and construction that may be required.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Steel casing, if required – ASTM A252, Grade 2, or ASTM A36, as specified. Furnish 100 percent penetration welds for vertical joints in non-corrugated permanent casings.

B. Reinforced steel – ASTM A615, A616, A617, or A706, as specified, or as shown on the contract drawings.

C. Concrete: Concrete work shall conform to requirements of “Specifications for Structural Concrete for Buildings (ACI 301)” and Specifications of Division 03000.

PART 3 - EXECUTION

3.1 EXCAVATION

A. Excavate drilled piers to dimensions and required elevations shown on contract drawings. Maintain sidewall stability during drilling. Closely spaced piers shall be drilled and concrete placed alternately with adjacent holes.

B. Determine suitability of supporting materials for drilled piers, as follows:

1. If directed by the Geotechnical Engineer, explore bearing stratum to depth equal to the diameter of the bearing area below the bottom of the drilled pier with probe hole.

2. Inspection of the bottom of each pier will be by the Geotechnical Engineer.

3. Excavate for drilled pier bells (if required) immediately upon confirmation by the Geotechnical Engineer.

4. If the stratum is not capable of providing the required load bearing, notify the Engineer for a determination of adjustments to be made. These may include, but not be limited to, advancing the shaft length as directed by the Geotechnical Engineer and repeating the above steps, or enlarging the bell diameter as

determined by the Engineer for appropriate bearing pressure as determined by the Geotechnical Engineer.

C. Provide gas testing equipment, protective cage, or temporary casing of proper diameter, length, and thickness and other safety equipment called for by law for inspection or testing of drilled piers and to protect workmen during hand belling or other operations necessitating entry into shaft.

D. Check each drilled pier for toxic and explosive gases prior to personnel entering. If gas is found, ventilate with forced air until safe for entry.

E. Remove from bottom of drilled piers, loose material or free water in quantities sufficient to cause settlement or affect concrete strength as determined by the Geotechnical Engineer. Excavate pier bottoms to a level plane. If bottoms are sloping rock, excavate to a level plan or step with maximum step height less than one-quarter the width or diameter of the bearing area.

F. Remove excavated material from site or as otherwise directed by the Owner.

3.2 STEEL CASING

A. Provide steel casing for shaft excavation where subsurface water is encountered and causes caving of overburdened soils or as required by Geotechnical Engineer. Provide casing of sufficient strength to withstand handling stresses, concrete pressure, and surround earth and/or fluid pressure. Make diameter of excavation in relation to diameter of casing, such as to create a minimum of void space outside of casing. Provide permanent casing, if required, with minimum outside diameter equal to nominal outside diameter of shaft.

B. Hole may be drilled as deep as it will stand prior to setting casing, thus allowing maximum casing length sections. Hole shall not, however, be drilled ahead of casing any further than hole will stand with out sloughing. At any time that soughing occurs, holes shall be cased to the bottom of the sloughing area immediately and prior to drilling deeper in hole.

C. Inside casing diameter shall be not less that required pier diameter.

D. Casing may be removed at option of Contractor unless otherwise specified. If casing is removed during or after concreting, follow special requirements specified in Article 3.4.

3.3 DEWATERING

A. Dewater drilled pier excavation prior to placing concrete. Perform pumping a manner that will not create ground loss problems that might adversely affect this and existing adjacent structures as determined by the Geotechnical Engineer. If during pumping, excessive water inflow is noted, use alternative means to reduce inflow such as extending casing, outside deep wells, or grouting, or other acceptable means. If water seepage still is considered by the Geotechnical Engineer to be excessive for safe removal, follow procedure as specified:

1. Holes shall be dewatered and poured dry where such dewatering does not cause instability of hole and is feasible with respect to quantity of seepage flow.

2. No more that 6” of water is allowable in the bottom of the hole at the beginning of the pouring. If there is more that 6” but less than 18” of water in the hole at the time the pour is begun, dry, neat cement shall be dropped down the hole in the amount of one sack for each 6 gallons of water in excess of the 6” allowable depth, just prior to pouring

3. If the depth of the water in the hole exceeds 18” the pour shall not be made until the hole is either dewatered to within the specified limits or the hole is poured by the tremie method.

4. If the rate of flow of seepage of water into the hole at the time of pouring is such that the volume of water which will enter the hole during the time of pouring exceeds ½ gallon per sack of cement in the concrete poured, then cement shall be added to the concrete in the mixer in the amount of one sack for each 5 gallons of water in excess of the above limit. If the seepage rate at the time of pour exceeds 2 gallons of water per sack of cement in the concrete to be poured, the hole shall be poured by the tremie method.

3.4 REINFORCING STEEL

A. Place reinforcement for drilled piers in accordance with the contract documents.

B. Use reinforcement at time of placement, which is free of mud, oil, or other coatings that adversely affect bond.

C. Reinforcement with rust, scale, or a combination of both may be used provided the minimum dimensions, including height of deformations and weight of wire brushed specimens, are not less than required by applicable ASTM specifications. Engineer will determine acceptability of such reinforcement.

D. Use metal reinforcement without kinks or non-specified bends. Straighten or repair bars in a manner that will not damage the bars or adjacent construction.

E. Place bars as shown on contract drawings with cover of not less than 3-inches where exposed to soil.

F. Make splices in reinforcement as shown on contract drawings, unless otherwise accepted.

G. Provide clear distance between bars of not less than one and one-half times the bar diameter, nor one and one-half times the maximum aggregate size.

H. Adequately tie and brace cages as required to retain shape. Furnish bracing and spacers required for accurate centering of cages whether shown on drawing or not.

3.5 CONCRETE

A. Obtain permission of Engineer prior to placing concrete.

B. Place concrete immediately after completion of excavation and after Geotechnical Engineer has verified bearing capacity. Do not leave uncased or belled excavations open overnight.

C. Sloughage or other loose material shall be removed from the hole prior to pouring.

D. Free fall concrete may be used provided it is directed through a hopper, or equivalent, such that fall is vertical down center of shaft without hitting sides or reinforcing. Vibrate top 5-feet of concrete, but only after casing has been pulled or when casing is permanent.

E. Place concrete in pier in one continuous operation. If a construction joint is unavoidable, level, roughen, and clean surface prior to re-commencement of concrete placement. Provide reinforcing dowels for uplift piles or a shear key when required by Engineer.

F. If casing is withdrawn, the Geotechnical Engineer will provide inspection during the removal of casing and placing of concrete. Withdraw casing only as shaft is filled with concrete. Maintain adequate head of concrete to balance outside soil and water pressure above the bottom of the casing at all times during withdrawal. Specific procedures that the Contractor will follow to accomplish this objective shall be submitted for approval.

G. If casing is left in place, fill void space between casing and shaft excavation with concrete or fluid grout by means of grout pipe and pump pressure, as required.

H. For placing concrete under water, where permitted, use tremie pipe or concrete pumping with special procedures, as specified or accepted.

I. The pouring of any pier shall be completed in one (1) hour. This means that the elapsed time from the beginning of pouring until completion of pouring shall not exceed one (1) hour. In any case where the time of the pouring of the pier exceeds one (1) hour, it will be assumed that the pier is defective and has a reduced or zero load capacity, and the Contractor shall remove these piers and construct additional piers, as found necessary by the Geotechnical Engineer to remedy the deficiency, at the expense of the Contractor.

J. Pouring shall not be started in any hole until enough concrete to complete the pier is on the job waiting to be poured. Concrete trucks for any pier shall not be ordered with staggered arrival times, but shall be on the job when pouring commences.

3.6 TREMIE POUR

A. Should any pier holes have an excessive amount of water and the dewatering procedure is not capable of achieving or maintaining the specific maximum water depth, then the concrete shall be placed with the tremie method in accordance with placement techniques detailed below.

B. Tremie pouring shall be performed by pumping the concrete to the tremie pipe, using concrete pumping equipment capable of pumping at least 50 cubic yards per hour against a head of concrete of 20” under job conditions. Tremie pouring using a hopper and milking the tremie pipe into the hole is not acceptable.

C. A special concrete mix shall be used for tremie pours, unless otherwise directed by the Geotechnical Engineer. Requirements for compressive strength of the concrete shall be determined by the Geotechnical Engineer. Mixes for concrete being placed in dry excavations shall be designed for a 4” to 6” slump. For concrete placed below the water level, slump shall be 6” to 8”.

D. Tremie pipe shall be rigid steel pipe with tight couplings. The tremie pipe shall be straight within ½” in 10”, and crooked or bent tremie pipe shall not be acceptable. Pipe shall be at least 4” diameter, but not more than half of the inside diameter of the reinforcing cage. Only rigid steel pipe shall be used in the hole; using hose in the hole is not acceptable.

E. Tremie pipe shall be lowered through the center of the cage, with caution, to within 1” of the bottom of the excavation.

F. Hose and tremie pipe shall be slicked with Portland cement slurry on clay. Bentonite or other material except Portland cement is permitted unless approved by Geotechnical Engineer.

G. Pumping of concrete shall commence after setting the reinforcing cage and tremie pipe in hole. The tremie pipe shall not be raised until the surface of the concrete in the hole is at least 10’ above the bottom of the tremie pipe, unless otherwise approved by the

Geotechnical Engineer. The bottom of the tremie pipe shall be kept at least 5’ below the top of the concrete until the pour is complete, including removal of muck, laitance and unsuitable concrete.

3.7 UNDERMINING FOUNDATION SOIL

A. Contractor shall take necessary precautions to prevent caving or soughing of a hole, which may endanger load capacity of adjoining pier or piers. The Geotechnical Engineer will make determination of loss of load bearing capacity of adjoining piers.

B. Contractor will be required to provide additional piers at his own expense wherever sloughing or caving in a hole endangers load-bearing capacity of adjoining piers. The Geotechnical Engineer will make determination of loss of load bearing capacity of adjoining piers.

3.8 CLEANING

A. Contractor shall keep the site as free of debris and rubbish as possible at all times. At the completion of his work, he shall remove all materials and apparatus from the premises and streets, scrape all drippings, and leave the entire work clean and free of debris.

END OF SECTION

SECTION 32 11 13

SUBGRADE PREPARATION & BASE MATERIAL

PART 1 - GENERAL

1.1 DESCRIPTION

A. Provide subgrade preparation and the base material installation complete, including clearing, grading, excavation, filling and compaction and dewatering.

B. Subgrade is that area on which concrete, aggregate base, synthetic turf playing field porous base or layer of any other non-organic material is to be placed.

1.2 QUALITY ASSURANCE

A. Reference Standards

1. Perform all work in accordance with all applicable laws, codes and regulations required by the Town of San Anselmo.

2. Perform work in accordance to applicable sections of the Standard Specifications.

3. Reference to "Standard Specifications" shall mean the Standard Specifications of the State of California, Business and Transportation Agency, Department of Transportation, CALTRANS.

B. Related work specified elsewhere includes:

1. Section 01 11 00 Summary of Work

2. Section 01 45 00 Quality Control

3. Section 01 71 23 Field Engineering

4. Section 32 11 13 Landscape Concrete

5. Section 33 40 10 Storm Drainage

C. Stipulations

1. The finished surface of the subgrade, at any point, shall not vary more than 0.05' above or below the elevation indicated on the drawings.

D. ASTM Standards.

1.3 SUBMITTALS

A. Provisions: Comply with the General Conditions.

B. Material list and product data of all items proposed to be provided under this Section.

C. Certificates (certified analysis of certificate of compliance) signed by the material producer.

1.4 PROJECT CONDITIONS

A. Coordination: Coordinate this work with the work of other Sections to avoid delay and interference with other work.

B. Refer to Soil & Foundation Investigations referred to below.

1.5 SOILS REPORT

A. A soils investigation report has been prepared for the project. See Section 00 31 32, Geotechnical Data.

B. The report is available in the office of the Landscape Architect and the Construction Manager for inspection by the Contractor. Unless otherwise specified, it is intended that all work be performed in accordance with the provisions of these reports.

C. Drilled piers may encounter ground water. Excavations for drilled piers may require casings and installation of concrete by means of pumping under the direction of the Geotechnical Engineer.

1.6 GENERAL REQUIREMENTS

A. When rain is forecast, temporary measures to protect areas of the exposed subgrade from saturation by rainfall or runoff shall be taken. These include, but are not limited to, covering grading and sloping of subgrade surfaces to prevent ponding, sealing disturbed, uneven subgrade, surfaces with a smooth drum roller, grading and excavating diversionary swales, trenches or detention basins.

B. Failure by the Contractor to comply with the above requirements to take reasonable and adequate measures or exercise sound engineering and construction practices to protect the work from damage. All repair work shall be performed at no additional cost to the Owner.

PART 2 - MATERIALS

2.1 AGGREGATE BASE - CLASS II

A. Imported aggregate base shall be virgin, Class II, and free from vegetable matter or other deleterious substances. The percentage composition by weight of aggregate base shall conform to Section 26 of the Standard Specifications.

PART 3 - EXECUTION

3.1 SUBGRADE PREPARATION

A. Refer to Section 31 00 00 Earthwork.

B. The finished subgrade surface shall be firm and unyielding under the weight of a loaded water truck traveling over the surface.

3.2 AGGREGATE BASE

A. Deliver to site as a uniform mixture and spread each layer in one operation without segregation.

B. Class 2 Aggregate Base shall be readily compacted and spread with equipment that will provide a uniform layer conforming to the planned section, and as specified in Section 26 of the Standard Specifications.

C. The aggregate base shall be compacted to at least 92 percent relative compaction.

D. Proof roll and mark “soft spots” for additional compaction or correction. Proof rolling operations must be performed in the presence of a Geotechnical Engineer.

E. Unsatisfactory material shall be removed and repaired to the satisfaction of the Geotechnical Engineer.

3.4 CLEANUP per General Conditions.

END OF SECTION

SECTION 32 11 15

SYNTHETIC COMPOSITE UNDERLAYMENT

PART 1 - GENERAL

1.1 SCOPE OF WORK

This work provided via separate CMAS contract.

This document defines requirements for the installation and operating performance of a resilient athletic base underlay material needed for a professional grade synthetic turf field. Defined are the primary system requirements for insuring optimum safety of the playing surface (impact attenuation/surface playability) and high capacity subsurface drainage of the installed playing field.

All specifications listed are defined per applicable ASTM standard test methods, unless no ASTM standard exists. All other specifications and tolerances listed shall be defined under standard ANSI and/or ISO drawing and specification rules.

This specification requires prior installation of stabilized subsurface base. Included is a perimeter foundation-grade concrete curb and high capacity trenched storm drain system.

1.2 RELATED SECTIONS

A. Section 01 11 00, Summary of Work

B. Section 31 00 00, Earthwork

C. Section 32 11 13, Subgrade Preparation and Base Material

D. Section 32 13 13, Landscape Concrete

E. Section 32 18 13, Synthetic Turf Playing Field

F. Section 32 80 00, Irrigation

PART 2 - TESTING REFERENCES

American Society for Testing and Materials (ASTM) Organization (ISO), European Committee for Standardization (EN), German Institute for Standardization (DIN), Cradle to Cradle Products Innovation Institute (C2CPII), Environmental Protection Agency (EPA):

ASTM D3574	Standard Specification for Flexible Materials - Tensile Strength, Tensile Strength, Tensile Elongation
ASTM D3575	Flexible cellular polymeric materials - Determination of Compression Strength
ASTM D4716	Test Method for Determining the (in-plane) Flow Rate per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using Constant Head – TRI procedure using characteristic flow equation
ASTM D4716	Test Method for Determining In-Plane Flow Rate
ASTM D696	Determination of Coefficient of Linear Thermal Expansion

ASTM F0355	Standard Test Method for Shock-Absorbing Properties of Playing Surface Systems and Materials
ASTM F0925	Test Method for Resistance to Chemicals of Resilient Flooring
ASTM F0970	Test Method for Static Load Limit
ASTM F1551	Test Method for Comprehensive Characterization of Synthetic Turf System Surfaces and Materials
ASTM F1936	Standard Specification for Impact Attenuation of Turf Playing Systems as Measured in the Field
ASTM F2333	Standard Test Method for Traction Characteristics of Athletic Shoe-Sports Surface Interface
ASTM F2898	Water Permeability of Synthetic Turf Systems and Permeable Bases
ASTM F3146	Standard Test Method for Impact Attenuation of Turf Playing Surface Systems Designated for Rugby
ASTM F3189	Standard Method for Measuring Force Reduction, Vertical Deformation, Energy Restitution of Synthetic Turf Systems Using the Advanced Artificial Athlete
ASTM G21-96	Determining Resistance of Synthetic Materials to Fungi
ASTM G22-76	Determining the Resistance of Plastics to Bacteria
C2CPII	Cradle to Cradle
EN 12616	Water Infiltration Rate
EN 14030:2010	Resistance to Acid and Alkaline Liquids
EN 14808:2005	Surfaces for Sports Areas. Determination of Shock Absorption
EN 14809:2005	Surfaces for Sports Areas. Determination of Vertical Deformation
EN12616	Water Infiltration Rate
EPA 6010B 7470A, 7471A	Heavy Metals, Mercury
EPA 8260B	Volatile Organics
EPA 8270C	Semi-Volatile Organics
ISO 1798	Standard Specification for Flexible Materials-Tensile Strength
ISO 14001:2004	Environmental Management Systems
ISO 62:2008 DIN 53 428	Standard Test Method for Water Absorption of Plastics
ISO 8301	Thermal Resistance
ISO 9001	Quality Management Systems

PART 3 - SYSTEM DESCRIPTION

3.1 General Requirements – An impact energy absorbing sub-base drainage material designed specifically for use with synthetic turf is required. The specified material must have both impact absorption and drainage properties that meet the following typical performance requirement:

3.1.1 Minimum material nominal thickness 25mm – material thickness must be within ± 1.5mm

3.1.2 Tensile Strength >80 psi (ASTM D3574-08 Test E)

3.1.3 Tensile Elongation >30% (ASTM D3574-08 Test E)

3.1.4 Compression Strength >20psi @ 25% strain (ASTM 3575-08 Test D)

3.1.5 Linear Thermal Expansion < 0.10 mm /m /° C (ASTM D696)

3.1.6 Water Absorption ≤1% after 24 hrs (ISO 62:2008 / DIN 52 438)

3.1.7 Water Permeability >500”/hr (ASTM 1551 DIN 18-035, Part 6)

3.1.8 Lateral Transmissivity at 0.005 gradient ≥ 0.50 gpm/ft (ASTM D4716 – TRI Environmental method using characteristic flow equation)

3.1.9 Head Injury Criterion <1000 from a 1.2m drop height and <700 from a 1.0m drop height (ASTM F3146-18, Procedure A)

3.1.10 Gmax <90 G's (ASTM 355-16, missile A)

3.1.11 Shock Absorption >60% (ASTM F3189-17 / EN 14808:2005)

3.1.12 Vertical Deformation <7.0mm (EN 14809:2005)

3.1.13 Resistance to Chemicals ≤ 2 (ASTM F925)

3.1.14 Resistance to Acid and Alkaline Liquids 0% tensile strength loss after 100-year model (EN 14030:2010 / ISO 12960:1998)

3.1.15 Resistance to Accelerated Aging (Oxidation) <10% tensile strength loss after 100-year model of 56 days at 110°C (ISO 13438:2004)

3.1.16 Resistance to Bacteria - no growth (ASTM G22)

3.1.17 Resistance to Fungi - no growth (ASTM G21)

Impact Safety Requirements for installed Surface System of Infilled Synthetic Turf and Underlayment:

3.1.18 Surface system must provide average HIC <700 from a 1.3m drop height upon initial testing of installed field. (ASTM F3146-18, Procedure A)

3.1.19 Surface system must provide maximum average Gmax of <100 g upon initial testing of installed field (ASTM F1936-10)

3.1.20 Surface system must provide maximum average Gmax of field of 120 g during warranty period of artificial turf. (ASTM F1936-10)

PART 4 - QUALITY ASSURANCE

4.1 Product must be made in ISO accredited facility in the United States of America according to the Federal Trade Commission Made in USA Standard.

4.2 Material must be manufactured in an ISO 9000:2008 certified facility.

4.3 Product must be of a homogenous material composition, with a documented chain of custody of all raw materials. Variable content material will not be accepted.

4.4 Manufacturer must provide documentation of material content and pre-approved standard OSHA MSDS sheet.

4.5 Manufacturer must demonstrate successful athletic field installation in the United States of at least 40 million square feet (approx. 500 fields) over a minimum period of 10 years.

4.6 Material must be covered by a pre-approved and binding 25-year limited product and performance warranty issue by a company in the United States of America.

Warranty shall include the provision that manufacturer will deliver to the Owner and install new panels to replace the non-conforming panels. The installation shall include the temporary removal and repair or replacement of the artificial turf and infill over the affected area.

4.7 Warranty must specify static and dynamic load limits in pounds and pounds per square inch. Warranty must not specify monetary limits of liability. Warranty must allow owner a notice period of at least 30 days for non-compliance claims.

4.8 Warranty must include guarantee for surface system HIC <700 from a 1.3m drop height according to ASTM F3148-18 upon initial testing of installed field.

4.9 Warranty must include guarantee for surface system Gmax <120 g according to ASTM F1936-10 for warranty period of artificial turf.

4.10 System seams should be mechanically locked into place by hand without cutting, splicing, use of additional materials, glue, fasteners, or secondary processes and equipment.

4.11 Material must be installed according to manufacturer’s instructions, without exceptions.

4.12 Manufacturer must provide written procedures to selected turf supplier or contractor for the installation of turf on top of underlayment.

4.13 Product is to be shipped as flat panels on pre-packaged pallets.

4.14 Prior to installation, manufacturer must provide an endorsed certificate as proof of at least $1,000,000 product liability insurance stipulated in the United States of America with field owner named as the certificate holder. The insurance certificate must specify the name and address of the field facility at which the specified product will be installed.

Part 5: Environmental Compatibility

5.1 Material must be manufactured in an ISO 14001:2004 certified facility.

5.2 Product must be Cradle to Cradle™ Certified by the Cradle to Cradle Products Innovation Institute.

5.3 Product must not contain concentrations of metals, volatile organic compounds (VOCs), or semi-volatile organic compounds (SVOCs) at concentrations greater than EPA Regional Screening Levels or Department of Toxic Substances Control Human Health Risk Assessment (HHRA) Note 3 thresholds. (EPA 60108, EPA 7470A EPA 7471A, EPA 8260B, EPA 8270C).

5.4 Product must not contain leachable concentrations of metals, VOCs, or SVOCs (using the synthetic precipitation leaching procedure) greater than maximum contaminant levels (MCLs) or Regional Water Quality Control Board Environmental Screening Levels for groundwater and surface water - fresh water aquatic habitat. (EPA 60108, EPA 7470A EPA 7471A, EPA 8260B, EPA 8270C).

5.5 Manufacturer must provide a product lifetime recycle / reuse program within the United States of America. Down-cycling and/or energy production not acceptable.

Additional Requirements for California:

5.6 Product must not contain a chemical on the current California Proposition 65 Safe Drinking Water and Toxic Enforcement Act of 1986 - Update effective 06 JUNE 2014

5.7 Product must not contain concentrations of substances at hazardous waste levels per California Code of Regulations, Title 22, Division 4.5, Chapter 11 – Identification and Listing of Hazardous Waste.

Part 6: Submittals

6.1 General: Bidding contractor must identify performance base system with bid package. If a non-specified product is identified, the proposed alternate product must be submitted and pre-approved by the design architect/engineer 10 days prior to the bid opening. If bidding contractor does not identify a manufacturer, the Township/School District will assume that the specified product is included in the bid package and will not consider substitutions.

6.2 Product Data: Submit 8” x 12” product sample and typical properties sheet.

6.3 Shop Drawings: Submit cross-sectional view showing product installation in relation to sub-base and synthetic turf (including edge attachment).

6.4 Test Data: Submit all applicable test data for compliance to specifications. All testing to be performed following applicable ASTM or other internationally recognized standards and procedures.

6.5 Installation: Submit copy of product installation instructions. Submit copy installation recommendations.

6.6 Warranty: Submit copy of product 25 -Year warranty coverage as specified in 4.6 – 4.8.

6.7 Insurance: Submit copy of endorsed insurance certificate as specified in 4.13.

Part 7: Products

7.1 Description: Resilient Molded Expanded Polypropylene Base System

7.2 Product: Brock PowerBase YSR or pre-approved equal

7.3 Contact Information:
Brock USA LLC

3090 Sterling Circle
Boulder, CO 80301
Telephone: (303) 544-5800 Fax: 866-850-9421
www.brockusa.com

7.4 Manufacturing/Ordering Information:
Brock USA LLC
3090 Sterling Circle
Boulder, CO 80301
Telephone: (303) 544-5800
Fax: 866-850-9421

7.5 Product format: Interlocking panels
Size: approximately 73.5 x 49.0 inches (1867 x 1245 mm) overall dimensions
Area: Net coverage per panel 24.15 ft^2 (2.24 m^2)
Thickness: 1.00” (25.4mm) ± .08”
Panel Weight: approximately 5.2 lbs / panel

Part 8: Product Substitutions

8.1 Product substitutions are allowed only in accordance with pre-bid substitution request procedures outlined in the contract documents. No substitutions will be allowed after the bid date. Bidding contractor must identify performance base system with bid package. If a non-specified product is identified, the proposed alternate product must be submitted and pre-approved by the design architect/engineer 10 days prior to the bid opening. If bidding contractor does not identify a manufacturer, the Township/School District will assume that the specified product is included in the bid package and will not consider substitutions.

Part 9: Installation

9.1 Per manufacturer’s recommendation - obtain written installation instructions and procedures from the manufacturer.

Part 10: Surplus Material

10.1 Surplus materials to be determined by the Owner prior to order and delivery of product to the installation site. Surplus quantities to be identified in writing by the General Contractor at the time of order placement.

Part 11: Project Completion

11.1 Upon completion of installation, a walk-through will be conducted to inspect the quality of work and ensure all details meet specifications.

11.2 A punch list of unacceptable or incomplete items will be documented and agreed uponfor completion prior to final project closeout and acceptance.

Part 12: Approvals

12.1 Finished synthetic base installation workmanship must be approved in advance by the turf manufacturer. Approvals to be based on a physical inspection performed at the site prior to installation of any synthetic turf material.

12.2 Any approvals sought after turf installation will be declined. Any associated repair or replacement costs associated with rework of the synthetic base will be the responsibility of the turf supplier/installer.

END OF SECTION

SECTION 32 13 13

LANDSCAPE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Provide Portland cement concrete site work complete, including the following principal items:

1. Footings for fencing, foundations, site furnishings.
2. Pavements, including aggregate bases.
3. Curbs, borders, footings for site work, pads, curbs ramps, bands, and utility collars.

B. Related Sections include:

1. Section 00 31 19 Existing Conditions
2. Section 00 31 32 Geotechnical Data
3. Section 01 11 00 Summary of Work
4. Section 01 45 00 Quality Control
5. Section 01 56 16 Dust Control
6. Section 01 56 19 Noise Control
7. Section 01 71 23 Field Engineering
8. Section 02 41 00 Site Preparation & Plant Protection
9. Section 12 93 05 Site Furnishings
10. Section 31 25 00 Erosion Control
11. Section 32 11 13 Subgrade Preparation & Base Material
12. Section 32 31 13 Chain Link Fencing

1.2 SUBMITTALS

A. Section 01 – Submittals: Submittal procedures.

B. The Contractor's Testing Laboratory's certificate of compliance.

C. The Contractor shall submit:

1. Certified copies of mix designs for each concrete class specified including compressive strength test reports.

2. Certification that materials meet requirements specified.

3. Certification from vendor that samples originate from and are representative of each lot proposed for use.

4. Weight master Certificates for concrete delivered to the site and used for improvements.

5. Mill certifications for reinforcing steel.

6. Product literature and samples of truncated dome pavers.

7. Items required under Waiver of Batch Plant Inspection specified herein.

8. Items required by Form DSA-103 Testing & Inspection Sheet.

9. Shop drawings showing reinforcing steel.

D. The Owner's Testing Agency will submit reports on tests and inspections performed to the Owner, the Landscape Architect, the Contractor, and the Division of the State Architect.

E. Schedule of placing for the Construction Manager’s review before starting Work.

F. Mock-ups of all materials under this Division shall be supplied for testing as requested by the Project Inspector.

G. Provide mock up of all concrete finishes, color and joints (with curing compound if any to be used) indicated on the drawings. Accepted mock-ups shall be kept at the job site to serve as a prerequisite for all finishes.

1.3 QUALITY ASSURANCE

A. Reference and Standards:

1. Requirements of GENERAL CONDITIONS and DIVISION NO. 1 applies to all Work in this Section.

2. Perform work in accordance with all applicable laws, codes and regulations require by Town of San Anselmo and the State of California.

3. Reference to "Standard Specifications" shall mean the current Standard Specifications of the State of California, Business and Transportation Agency, Department of Transportation, CALTRANS.

4. The American Concrete Institute (ACI): "Manual of Concrete Practice," Parts 1, 2 and 3.

5. California Code of Regulations. Title 24, Current edition, also known as California Building Code (CBC).

6. American Society for Testing and Materials (ASTM).

B. Stipulations:

1. Finish Surface Tolerance: 1/4-inch maximum variation in 10 feet.

2. At no point shall paving surface fail to drain.

3. The finish surface of concrete paving along accessible routes of travel shall be at least as slip resistant as medium broom finish perpendicular to the path of travel for slopes under 6%, and slip resistant heavy broom finish perpendicular to the path of travel at slopes 6% or greater. See the landscape drawings for specified finishes. Ground and floor finishes shall be stable, firm and slip resistant and shall comply with CBC 11B-302.

4. Contractor to provide conformance survey showing the finished grade of concrete paving is in conformance with the designed grades.

5. The Contractor shall be responsible for quality of concrete in place color and finish and control of cracking and spalling. All exposed concrete shall have a consistent color and finish and be free from uncontrolled cracking and spalling.

6. The Contractor shall be responsible for quality of concrete in place and shall bear burden of proof that concrete meets minimum requirements. Use the same mix design for all exposed concrete.

7. Placing of concrete by means of pumping will be an acceptable method of placement providing that the Contractor can demonstrate that:

   a. Specified concrete strengths will be met.

   b. Equipment has a record of satisfactory performance under similar conditions and using a similar mix.

   c. Trial batches have been made.

1.4 TESTS

A. The Project Inspector will select a qualified testing laboratory to take samples for testing during the course of the work as considered necessary. The Owner will pay costs for such tests. Contractor shall cooperate in making tests and shall be responsible for notifying the designated laboratory in sufficient time to allow taking of samples at time of pour.

B. Should tests show that concrete is below specified strength, Contractor shall remove all such concrete, as directed by the Project Inspector. Full cost of removal of low strength concrete, its replacement with concrete of proper specified strength and testing, shall be borne by Contractor.

C. The Contractor's Testing Laboratory Qualifications: The Contractor's Testing Laboratory shall be under direction of a Civil Engineer registered in the State of California, shall have operated successfully for four years prior to this work, and shall conform to requirements of ASTM E329.

1.5 SOILS REPORT

A. A soil investigation report has been prepared for the project.

B. The report is available in the office of the Architect and the Construction Manager for inspection by the Contractor. Unless otherwise specified, it is intended that all work be performed in accordance with the provisions of the report.

C. Drilled piers may encounter ground water. Excavations for drilled piers may require casings and installation of concrete by means of pumping under the direction of the Geotechnical Engineer.

PART 2 - PRODUCTS

2.1 FORMWORK MATERIALS

A. Forms shall be wood, except curbs may be formed with accepted metal form systems.

1. Plywood: 5/8-inch thickness minimum. Use overlaid plywood complying with U.S. Product Standard PS-1 "A-C or B-B High Density Overlaid Concrete Form", Class 1. Panels to receive specified form sealer to ensure uniform finish of exposed surfaces.

2. Lumber: Douglas fir, "Standard" grade or better (grade marks not required).

B. Form Coatings: Knox-Crete, or equal.

C. Form Ties: Burke "Penta-Tie," or equal, cone and rod type with 1-inch break-back or product similar to appropriately sized Simpson Strong Tie WT, or equal. Do not use form ties in forms for concrete seat wall and sculpture table.

2.2 REINFORCING MATERIALS

A. Bar Reinforcement ASTM A615.

1. #3 and smaller: Grade 40.

2 #4 and larger: Grade 60.

B. Smooth Dowels: Aztec Concrete Accessories “Speed Dowels,” or equal product 800-531-3355.

2.3 CONCRETE CLASSES

CLASS	STRENGTH	AGGREGATE	WEIGHT	SLUMP
A	3000	3/4	145	4

A. Class: Identifies all concrete as specified.

B. Strength: Compressive strength in psi after 28-days when tested in accordance with ASTM C39. All concrete shall develop compression strength specified in 28-days. To meet above requirements, mix shall be designed such that average compressive strength will exceed specified 28-day strength by an amount as specified by ACI 318.

C. Aggregate: Maximum size in inches.

D. Weight: Pounds per cubic foot, air dry.

E. Slump: In inches when tested in accordance with ASTM C143.

2.4 CONCRETE MATERIALS

A. General Requirements:

1. Cement and aggregates shall have proven history of successful use with one another. Sources of cement and aggregate shall remain unchanged throughout work unless the Landscape Architect approves request for change made at least 10-days prior to anticipated date of casting.

2. Ready-mixed concrete shall meet requirements of ASTM C94.

3. Deviations in properties of materials tested by the Owner's Testing Agency shall be cause for their rejection pending additional test results and redesign of mix by the Contractor's Testing Laboratory.

4. No frozen aggregates will be permitted.

B. Cements:

1. ASTM C150, Type V or Type II (modified). Use one brand of cement throughout project unless otherwise acceptable to Landscape Architect.

C. Fly Ash: ASTM C618, Type F. Fly ash as a replacement for Portland cement use no less than 15% if used, and no more than 25%.

D. Aggregates:

1. Coarse: ASTM C33. Coarse aggregate shall consist of a clean, hard, fine grained, sound crushed rock, or washed gravel or a combination of both. It shall be free from oil, organic matter or other deleterious substances and shall not contain more than two percent by weight of shale or cherty material. "Cleanness value shall not be less than 75 when tested per MM Test Method, 227 and conforming to CBC.

2. Fines: ASTM C33. Sand equivalent shall be not less than 75 when tested as per ASTM D2419.

3. Provide aggregates from a single source for exposed concrete.

E. Water: Clean and potable, free from impurities detrimental to concrete.

F. Water-Reducing Admixture: Must be compatible with color pigments where required. ASTM C494, Type A, that do not contain non-lignin sulfonate. Same as Grace Construction Materials' "WRDA" with Hycol; Master Builders "Pozzolith" 322N; or equal product substituted per Section 01630.

G. Air Entraining Admixture: Must be compatible with color pigments where required. ASTM C260, certified by manufacturer to be compatible with other products. Same as W.R. Grace's "Daravair", Master Builders' "Micro-Air", Sika Corp.'s "Sika Aer", or equal product substituted per Section 01630.

H. Other Admixtures: Only as approved by the Landscape Architect.

I. Non-Shrink Grout: Premixed high strength grout requiring only addition of water at the site. Same as Master Builder's "Masterflow 928 Grout"; Burke's "Non-Ferrous, Non-Shrink Grout", or equal product substituted per Section 01630.

J. Curing Materials:

   1. Curing Compound: ASTM C309. Water loss – not more than 0.55 kg/m^2 in 72 hours; Light Reflectance – not less than 60%. Same as Grace Construction Materials' "Horn Clear Seal"; Grimes Co.'s "Sealcrete"; Master Builders' "Masterseal W", or equal product substituted per Section 01630.

   2. Apply to slabs-on-grade at 150 percent of manufacturer's recommended coverage rate.

K. Epoxy Adhesive: Two component material suitable for anchoring rebar into dry or damp concrete. Same as Burke's "Burk Epoxy MV", Covert's "CIA-Gel 7000", Hilti's "HIT C-100" or equal product substituted per Section 01630.

L. Lamp Black: As supplied by batch plant.

2.5 CONCRETE MIXES

A. Concrete mixes shall be accepted and shall be in accordance with CalTrans Standard Specifications Section 90. Unless otherwise noted, mix shall be Class "A," 3,000 psi, Type II Portland cement and 3/4-inch maximum aggregate.

B. Lamp Black: Concrete for paving shall be darkened by the addition of accepted agents at the mixer. The proportion of lampblack or other accepted colorant, to a great extent dependent on the color of the cement used in the mix, shall be that required to properly darken the concrete to reduce glare, and shall be subject to the approval of the Project Inspector or as required by Landscape Architect. Provide mock-ups with a ratio of one pound of lamp black for each cubic yard of concrete or as otherwise approved. Use Davis Colors or equal pigment as required to meet lamp black requirement.

2.6 ANCILLARY MATERIALS

A. Aggregate Base:

   1. Class 2 aggregate base conforming to Section 26 of the Standard Specifications.

   2. All base rock under concrete paving or curbs or concrete borders shall be virgin rock.

B. Expansion Joint Material:

   1. Fiber Expansion Joint: A non-extruding resilient filler, saturated with high quality bituminous materials having preserving characteristics. W. R. Meadows or accepted equal. Conform to ASTM-D1751-83. Include Joint Sealant.

C. Concrete Sealer: Use sealer compatible with pigments in concrete. Scofield Selectseal-W as manufactured by L. M. Scofield Co. or silicone-based, non-staining product such as Consolideck® SingleStep™ acrylic-siloxane blend that meets Type I, Class A requirements of ASTM C 1315 and as accepted by Landscape Architect.

D. Joint Sealant: Use joint sealant compatible with pigments in concrete "Sonolastic Sealant Two-Part" as manufactured by Sonneborn-Contech, Building Products Division, Contech, Inc.; or Sikaflex-1a elastomeric joint sealant available from Sika Corporation, Hayward (510) 487-2294. or approved equal. Joint caps or bond breaker tape to be as recommended by sealant manufacturer. Color shall be as selected by Architect.

E. Curing Compound: ASTM C309, Water-base type, free of permanent color, oil or wax, or accepted equal. Curing compound shall be compatible with color pigments

F. Combination Curing Compound Concrete Sealer: Scofield Cureseal-W as manufactured by L. M. Scofield Co. or W. R. Meadows Vocomp-20, (800-342-5976) or accepted equal. Combination Curing Compound. Combination Curing Compound Concrete Sealer shall be compatible with color pigments.

G. Color of Concrete: Pigments for integral colored concrete as manufactured by Davis Colors, 800-356-4848, applied at manufacturer’s specified rates of application, or accepted equal.

H. Color of Concrete: Pigments for stained concrete as manufactured by L. M. Scofield, 800-800-9900, applied at manufacturer’s specified rates of application, or accepted equal.

I. Precast Truncated Dome Pavers: as shown on the Drawings and per manufactures’ specifications.

2.7 MIXES

A. General Requirements:

1. The Contractor shall perform tests or assemble the necessary data indicating conformance with specifications.

2. For each mix submit data showing that proposed mix will attain the required strength in accordance with requirements of CBC.

3. The Contractor shall instruct Laboratory to base mix design on use of materials tested and approved by the Owner's Testing Agency.

4. Mix design shall include compression strength test reports per CBC Section 1905A.3.

5. Mix shall be designed, tested, and adjusted if necessary in ample time before first concrete is scheduled to be placed. Laboratory data and strength test results for revised mix design shall be submitted to Landscape Architect prior to using in project.

6. Ensure mix designs will produce concrete to strengths specified and of uniform density without segregation.

7. If mix yield exceeds 1-cubic yard, modify mix design to no more than one cubic yard without changing cement content.

8. The Contractor's mix designs shall be subject to review by the Landscape Architect and by the Owner's Testing Agency.

9. Introduction of calcium chloride will not be permitted.

10. Unspecified admixtures will not be permitted unless the Landscape Architect reviews, the Contractor modifies mix designs as necessary, and modifications are accepted by the Owner's Testing Agency.

B. Slab-on-Grade and Concrete Paving Mix requirements:

1. Maximum water/cement ratio: 0.45.

2. Use of Water-Reducing admixture is required. Use High Range Water-Reducing admixture (super plasticizer) when required to maintain workability and pumpability.

C. Patching Mortar: Mix in proportions by volume of one part cement to two parts fine sand.

D. Concrete Fill: Mix in proportions by volume of one part cement, two parts fine aggregate, one part coarse aggregate (3/8- inch); with as little water as necessary to make stiff workable plastic mix.

E. Non-Shrink Grout: Follow approved manufacturer's printed instructions and recommendations.

2.8 MIXING

A. Batching Plant Conditions:

1. Ensure equipment and plant will afford accurate weighing, minimize segregation and will efficiently handle all materials to satisfaction of the Landscape Architect and the Owner's Testing Agency.

2. Replace at no additional expense equipment the Landscape Architect and the Owner's Testing Agency deem inadequate or unsuitable.

3. Use approved moisture meter capable of determining moisture content of sand.

B. General Requirements:

1. Thoroughly clean concrete equipment before use for Architectural concrete mixes to avoid contamination.

2. Mix cement, fine and coarse aggregates, admixtures and water to exact proportions of mix designs. Method of mixing shall comply with CBC Section 1905A.8.

3. Measure fine and coarse aggregates separately according to approved method which provides accurate control and easy checking.

4. Adjust grading to improve workability; do not add water unless otherwise directed.

5. Maintain proportions, values, or factors of approved mixes throughout work.

6. Mix concrete in transit mixers five minutes immediately prior to discharge in addition to mixing as called for by ACI 304 and ASTM C94.

C. Admixtures: Use automatic metering dispenser to introduce admixture into mix. Dispenser shall be recommended and calibrated by admixture manufacturer.

2.9 SOURCE QUALITY CONTROL

A. The Owner's Testing Agency will:

1. Review mix designs, certificates of compliance, and samples of materials the Contractor proposes to use

.

2. Test and inspect materials, as necessary, in accordance with ACI 318 and CBC Chapter 19A for compliance with requirements

3. Take samples as required from the Contractor's designated sources.

4. Take one grab sample for each 100 tons of Portland cement except that, when used in bulk loading ready-mix plants where separate bins for pre-tested cement are not available, take grab samples for each shipment of cement placed in bin with not less than one sample being taken for each day's pour and subsequently test such samples if required by the Landscape Architect who may be so advised by the Division of the State Architect (DSA).

5. Test both coarse and fine aggregate by use of solution of sodium or magnesium sulfate, or both whenever in the judgment of the Landscape Architect such tests are necessary to determine quality of material. Perform such tests in accordance with ASTM C88. Loss shall not exceed 6-percent of either fine or coarse aggregate. Aggregate failing to comply with this requirement may be used in the Work provided it contains less than 2- percent of shale and other deleterious particles and shows a loss in soundness test of not more than 10-percent when tested in the sodium sulphate solution. Test aggregates as required by CBC Section 1903A.3.

6. Test for sand equivalent of fine aggregate in accordance with California Test 217.

7. Test for cleanness value of coarse aggregate in accordance with California Test 227.

8. Inspect plant prior to any work to verify following:

    a. Plant is equipped with approved metering devices for determining moisture content of fine aggregate.

    b. Other plant quality controls are adequate.

9. Continuously inspect quality and quantity of materials used in transit mixed concrete, in batched aggregates and ready-mixed concrete at mixing plant or other location per CBC Chapter 19A where other materials are measured.

B. Waiver of Batch Plant Inspection:

1. Continuous batch plant inspection may be waived in accordance with CBC Chapter 19A if the plant complies with ASTM C94 and has been certified by an agency

acceptable to DSA to comply with the requirements of the National Ready Mix Concrete Association.

2. When batch plant inspection is waived, the following requirements shall apply:

   a. Testing Agency shall check the first batching at the start of work and furnish mix proportions to the licensed Weighmaster.

   b. Licensed Weighmaster shall identify material quantities and certify each load by a ticket.

   c. Project Inspector shall collect truck mix tickets with load identification and maintain a daily record of placement. Trucks without a load ticket identifying the mix shall be rejected. Copies of daily placement record shall be submitted to DSA.

   d. At the end of the project, the Weighmaster shall submit an affidavit to DSA certifying that all concrete supplied conforms to proportions established by mix designs.

2.10 GEOCOMPOSITE MATERIAL (Enkadrain)

A. Drainage Composite 3811R geocomposite drainage mat available from Sika.

B. Waterproofing System: MFM Subseal 60 Sheet Membrane Prime-A-Seal Primer and Mastic+Plus available from MFM Building Products, Coshocton, OH, (800) 882-7663, http://www.mfmbp.com/watermem.html, Local representative: Don Lambrecht & Associates, Inc., Rocklin, CA. 95677, 916-632-2059.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

A. Install all concrete work true to line and grade as indicated on the drawings.

B. Correct irregularities to the satisfaction of the Landscape Architect.

3.2 PREPARATION

A. Take every precaution to obtain a subgrade of uniform bearing power by compaction to provide a firm base.

B. Subgrade shall be kept moist and shall not be allowed to dry out before placement of concrete. Place no material on muddy subgrade.

C. Aggregate base, where indicated, shall be placed and compacted in conformance with CalTrans Standard Specifications 26-1.04 and 26-1.05.

D. Obtain acceptance of subgrade from Project Inspector prior to placing steel and concrete.

3.3 FORMS

A. Forms shall be constructed in accordance with ACI 347 and shall be of sufficient strength and sufficiently tight to prevent visible distortion or leakage of mortar and fines.

B. Forms for exposed surfaces shall be designed to protect intended finish. Deflection of facing material between studs shall not exceed 0.0025 of the span. Facing material and pattern of joints shall be as accepted by the Project Inspector.

C. For vertical surface of wall footings below grade, clean-cut trench may be used in lieu of form if character of soil will permit installation without sluffing and width of concrete is increased at least 1 inch beyond indicated dimension of each face poured against earth.

D. Curb, mow band and pavement edge forms shall extend full depth of concrete. Curves shall be formed with flexible metal or wood made up of thin laminations. Curve forms shall extend one stake space straight beyond tangent point.

E. Maintain forms within the following tolerances.

   1. Top of Form: Plus or minus 1/8 inch in 10 feet and no abrupt variations; at required elevation to plus 3/8 inch.

   2. Face of Form: Plus or minus 1/4 inch in 10 feet longitudinal and no abrupt variations; perpendicular to surface plus or minus 1/8 inch.

F. Obtain approval of formwork from Project Inspector prior to placing concrete.

G. Forms may be reused upon cleaning and coating with parting compound to ensure separation from concrete without damage.

H. After concrete is placed, the following minimum times shall elapse before removal of forms.

   1. Footing sides: 24 hours.

   2. Walls and benches: 48 hours.

   3. Curbs: 1 hour.

3.4 REINFORCEMENT

A. All concrete shall be steel reinforced unless specifically noted to be "not reinforced." If no reinforcement is shown, reinforce in same manner as that shown in similar places.

B. Fabricate and place reinforcement as indicated on the Drawings and in accordance with ACI "Detailing Manual" SP-66. No reinforcement shall be placed prior to distribution of the accepted shop drawings.

C. Secure reinforcement in position by suitable supports and by wiring at intersections with tie wire. Supports shall be of sufficient number and strength to resist crushing or displacement under full load. Metal shall not extend to surface of concrete.

D. At time of placing concrete, reinforcing shall be free of excessive rust, mill scale, or other bond reducing matter. Immediately before placing concrete, check and adjust position, support and anchorage.

3.5 PLACING CONCRETE

A. The Inspector of Record, Architect, Structural Engineer, Testing Laboratory and DSA shall be notified at least 48 hours before placing concrete.

B. Place concrete in accordance with ACI 304, CBC Sections 1905A.9 and 1905A.10 and as specified.

C. Place concrete in cycles as a continuous operation to permit proper and thorough integration and to complete scheduled placement. Place no concrete where sun, wind, heat, or facilities prevent proper finishing and curing.

D. Convey concrete as rapidly and directly as practicable to preserve quality and to prevent separation from rehandling and flowing; do not deposit concrete initially set. Cast concrete within ninety (90) minutes after adding water unless otherwise noted. Retempering of concrete which has partially set will not be permitted.

E. Take precautions to avoid damage to under-slab moisture barrier and displacement of reinforcement and formwork.

F. Deposit concrete vertically in its final position. Avoid free falls in excess of six feet where reinforcement will cause segregation and in typical conditions unless the Architect approves otherwise.

G. Keep forms and reinforcement clean above pour line by removing clinging concrete with wire brush before casting next lift. Also remove leakage through forms.

H. Interruption in casting longer than 60-minutes shall be cause for discontinuing casting for remainder of day. In this event, cut back concrete and provide construction joints as the Architect directs; clean forms and reinforcement as necessary to receive concrete at a later time.

I. Hot Weather Concreting: Conform to ACI 305 and following requirements when mean daily temperature rises above 75 degrees Fahrenheit.

   1. An upper temperature limit of concrete mixes shall be established by the Contractor for each class of concrete. Concrete temperature during placing shall not be so high as to cause difficulty from loss of slump, flash set, or cold joints, and shall not exceed 90°F. Other project climatic conditions detrimental to concrete quality such as relative humidity, wind velocity, and solar radiation shall also be considered.

   2. Trial batches of concrete for each mix design shall be made at the limiting mix temperature selected. In lieu of trial batches, compression strength test reports (20 minimum) at the limiting temperature for each proposed mix shall be submitted to the Owner’s testing laboratory for review.

   3. Practices to maintain concrete below maximum limiting temperature shall be in accordance with ACI 305. Concrete ingredients may be cooled before mixing, or flake ice or well-crushed ice of a size that will melt completely during mixing may be substituted for part of the mixing water.

   4. Practices to avoid the potential problems of hot weather concreting shall be employed by the Contractor in accordance with ACI 305.

   5. When the temperature of the reinforcing steel or steel deck forms is greater than 120°F, reinforcing and forms shall be sprayed with water just prior to placing the concrete.

J. Cold Weather Concreting:

1. No placement of concrete will be allowed at temperatures below 20 degrees Fahrenheit or if mean daily temperature for curing period is anticipated to be below 20 degrees Fahrenheit.

2. No concrete placement will be allowed on frozen subgrade.

3. Conform to ACI 306 and following requirements when mean daily temperature falls below 40 degrees Fahrenheit.

   a. Reinforcement, forms or ground to receive concrete shall be completely free from frost.

   b. Concrete at time of placement for footings shall have temperature no lower than 50 degrees Fahrenheit, for all other concrete this minimum temperature at time of placement shall be 60 degrees Fahrenheit. Maximum temperature shall be 90 degrees Fahrenheit.

   c. Concrete shall be maintained at temperature no lower than 50 degrees Fahrenheit for minimum 7-day period after placement by means of blanket insulation, heaters, or other methods as approved by the Landscape Architect.

   d. Use of calcium chloride or admixtures containing calcium chloride as accelerators will not be permitted.

   e. The Contractor shall keep a record of concrete surface temperature for first 7-days after each pour. This record shall be open to inspection by the Inspector.

K. Consolidating:

1. Use vibrators for thorough consolidation of concrete.

2. Provide vibrators for each location during simultaneous placing to ensure timely consolidation around reinforcement, embedded items and into corners of forms; ensure availability of spare vibrators in case of failures. Vibrate through full depth of freshly placed concrete.

3. Do not place vibrators against reinforcement, attach to forms, or use to spread concrete.

4. Exposed Concrete: Vibrate with rubber type heads and, in addition, spade along forms with flat strap or plate.

L. Construction Joints:

1. Verify location and conformance with typical details; provide only where designated or approved by the Landscape Architect. Comply with CBC Section 1906A.4.

2. All horizontal and vertical construction joints to be thoroughly sandblasted to clean and roughen entire surface to minimum 1/4-inch relief exposing clean coarse aggregate solidly embedded in mortar matrix.

3. Just prior to depositing concrete, the surface of the construction joint shall be thoroughly wetted.

M. Walls and Other Formed Elements:

1. Space points of deposit to eliminate need for lateral flow. Placing procedures of concrete in forms permitting escape of mortar, or flow of concrete itself, will not be permitted.

2. Level top surface upon stopping work.

3. Take special care to fill each part of the forms by depositing concrete directly as near final position as possible, and to force concrete under and around reinforcement, embedded items, without displacement.

4. After concrete has taken its initial set, care shall be exercised to avoid jarring forms or placing any strain on ends of projecting reinforcement.

5. Where backfill is placed against a wall, it shall be adequately shored until it has attained design strength.

N. Precast Truncated Dome Pavers:

1. Install as shown on the Drawings and per manufactures' specifications and consistent with the accepted mock up.

2. Space joints consistently and as acceptable to the architect.

3. Clean and seal pavers as specified by manufacturer.

3.6 JOINTS AND GROOVES

A. Plane of joints shall be perpendicular to surface. Where new pavements join existing, joints shall align.

B. Score Joints: Form in the fresh concrete using a jointer to cut the groove so that a smooth uniform impression is obtained to 1" depth unless shown otherwise. All joints shall be struck before and after brooming. Tool concrete both sides of joint.

C. Expansion Joints and Edging: Provided at the location and intervals as shown on the drawings, and at all locations where concrete paving abuts buildings, walls, pillars, curbs or other structures. Fiber joint material shall be placed with top edge 1/2" below the paved surface to allow space for sealant, and shall be securely held in place to prevent movement. Metal key joint material shall be placed flush with top edge of the paved surface, and shall be securely held in place to prevent movement. Joint and other edges shall be formed in the fresh concrete using an edging tool to provide a smooth uniform impression. All edges shall be struck before and after brooming.

D. Sealed Joints: After the curing period, fiber expansion joints shall be carefully cleaned and filled with accepted joint sealant to just below adjacent paved surface in such a manner as to avoid spilling on paved surfaces or overflowing from joint.

E. Construction Joints: Place construction joints at the end of pours and at locations where placement operations are stopped for a period of more than one half hour, except where such pours terminate at expansion joints.

1. Construction joints shall be keyed with formed tongue and groove.

2. Tool concrete edge both sides of construction joint.

3.7 FINISHING

A. Flatwork and Curbs:

1. The finish surface of concrete paving along accessible routes of travel shall be at least as slip resistant as medium broom finish perpendicular to the path of travel for slopes under 6%, and slip resistant heavy broom finish perpendicular to the path of travel at slopes 6% or greater. See the landscape drawings for specified finishes.

2. Surface Finishes:

a. Float Finish (typical preliminary finishing for slabs to receive other finishes): The surface of the slab shall be screeded and all surface water and laitance removed. Floating shall be started as soon as the screeded surface has stiffened sufficiently. Floating shall be performed by hand using a wood float and shall be the minimum necessary to produce a relatively smooth, level, even-textured surface.

b. Medium Broom Finish: After the slab has been float finished as described above, the surface shall be uniformly directional textured by coarse stable broom to match accepted mock up. Non-slip finish compliant with ADA requirements. Apply on concrete paving perpendicular to the path of travel.

c. Heavy Broom Finish: After the slab has been float finished as described above, the surface shall be uniformly directional textured by coarse stable broom to match accepted mock up. Non-slip finish compliant with ADA requirements perpendicular to the path of travel.

d. Medium Brush Finish (typical for curbs): After the front form is removed, exposed surface shall be toweled smooth and then given a uniform light texture with fine brush parallel to line of curb, to match accepted mock up.

3.8 CURING

A. General Requirements:

1. Take curing measures immediately after casting and for measures other than application of curing compound, extend for seven days. The Architect may recommend longer periods based upon prevailing temperature, wind and relative humidity. Comply with CBC Section 1905A.11.

2. Avoid alternate wetting and drying and fluctuations of concrete temperature.

3. Protect fresh concrete from direct rays of sun, rain, freezing, drying winds, soiling, and damage.

4. Do not permit curing method to affect adversely finishes or treatments applied to finish concrete.

B. Curing Method, Typical: Obtain the Landscape Architect's approval of alternate measures.

1. Keep forms and concrete surfaces moist during period forms are required to remain in place.

2. Apply curing compound per manufacturers' recommendations.

C. Cure exposed concrete in accordance with CalTrans Standard Specifications Section 90.

D. Only water or curing compounds that impart no permanent color or gloss shall be used for curing concrete.

3.9 CONCRETE SEALING

A. Seal all exposed surfaces according to manufacturer’s specifications.

3.10 FIELD QUALITY CONTROL

A. The Owner's Testing Agency will:

1. Perform testing in accordance with ACI 318 and CBC Section 1903A and 1905A.

2. Review concrete mix designs.

3. Inspect concrete and grout placement continuously.

4. Test concrete to control slumps according to ASTM C143.

5. Continuously monitor concrete temperature as it arrives on the site.

6. Test concrete for required compressive strength in accordance with CBC Section 1905A.6:

a. Make and cure three specimen cylinders according to ASTM C31 for each 50 cubic yards, or fraction thereof, of each class poured at site each day.

b. Retain one cylinder for 7-day test and two for the 28-day test.

c. Number each cylinder 1A, 1B, 1C, 2A, 2B, 2C, etc; date each set; and keep accurate record of pour each set represents.

d. Transport specimen cylinders from job to laboratory after cylinders have cured for 24-hours on site. Cylinders shall be covered and kept at air temperatures between 60 and 80 degrees Fahrenheit.

e. Test specimen cylinders at age 7-days and age 28-days for specified strength according to ASTM C39.

        f. Base strength value on average of two cylinders taken for 28-day test.

    7. Test and inspect materials, as necessary, in accordance with ACI 318, MM Test Method 227 (Coarse Aggregates) and MM Test Method 217 (Fine Aggregates), for compliance with requirements specified in this section.

B. The Contractor shall:

1. Submit ticket for each batch of concrete delivered to job site. Ticket shall bear the following information:
    a. Design mix number.
    b. Signature or initials of ready mix representative.
    c. Time of batching.
    d. Weight of cement, aggregates, water and admixtures in each batch with maximum aggregate size.
    e. Total volume of concrete in each batch.
    f. Notation to indicate equipment was checked for contaminants prior to batching.
2. Pay the Owner's Testing Agency for taking core specimens of hardened structure and testing specimen according to ASTM C88 and C42 when laboratory tests of specimen cylinders show compressive strengths below specified minimum.

3.11 CLEANING, PATCHING AND DEFECTIVE WORK

A. Where concrete is under strength, out of line, level or plumb, or shows objectionable cracks, honeycombing, rock pockets, voids, spalling, exposed reinforcement, signs of freezing or is otherwise defective, and, in the Architect's judgment, these defects impair proper strength or appearance of the work, the Landscape Architect will require its removal and replacement at the Contractor's expense.

B. Immediately after stripping and before concrete is thoroughly dry, patch minor defects, form-tie holes, honeycombed areas, etc., with patching mortar. Patch shall match finish of adjacent surface unless otherwise noted. Remove ledges and bulges.

C. Compact mortar into place and neatly file defective surfaces to produce level, true planes. After initial set, dress surfaces of patches mechanically or manually to obtain same texture as surrounding surfaces.

D. Rock Pockets:

1. Cut out to full solid surface and form key.
2. Thoroughly wet before casting mortar.
3. Where the Landscape Architect deems rock pocket too large for satisfactory mortar patching as described, cut out defective section to solid surface, key and pack solid with concrete to produce firm bond and match adjacent surface.

E. Cleaning

1. Ensure removal of bituminous materials, form release agents, bond breakers, curing compounds if permitted and other materials employed in work of concreting which would otherwise prevent proper application of sealants, liquid waterproofing, and other delayed finishes and treatments.

2. Where cleaning is required, take care not to damage surrounding surfaces or leave residue from cleaning agents.

3.12 PROTECTION

A. Protect concrete from injurious action of the elements and defacement of any nature during construction operations.

B. Protect exposed corners of concrete from traffic or use which will damage them in any way.

C. Make provisions to keep all exposed concrete free from laitance caused by spillage or leaking forms or other contaminants. Do not allow laitance to penetrate, stain, or harden on surfaces which have been textured.

D. Remove and replace pavement that does not comply with requirements in this Section.

E. Protect pavement from damage. Do not permit construction traffic on concrete pavement. Exclude other traffic from pavement for at least 28 days after placement.

F. Maintain pavement free of stains, discoloration, dirt, and other foreign material. Sweep pavement not more than two days before date scheduled for Substantial Completion inspections.

3.13 PAVEMENT TOLERANCES

A. Comply with the following tolerances:

1. Elevation: 1/4 inch.

2. Thickness: Plus 3/8 inch minus 1/4 inch.

3. Surface: Gap below 10-foot-long, unleveled straightedge not to exceed 1/4 inch.

4. Lateral Alignment and Spacing of Dowels: 1 inch.

5. Vertical Alignment of Dowels: 1/4 inch.

6. Alignment of Dowel-Bar End Relative to Line Perpendicular to Pavement Edge: Length of dowel 1/4 inch per 12 inches.

7. Joint Spacing: 3 inches.

8. Contraction Joint Depth: Plus 1/4 inch, no minus.

9. Joint Width: Plus 1/8 inch, no minus.

3.14 DEFECTIVE CONCRETE

A. If any concrete work is not formed as indicated, is under strength concrete, is concrete is out of line, level or plumb, or showing objectionable cracks, honeycomb, rock pockets, voids, spalling or exposed reinforcing, it shall be removed, repaired or replaced as directed by the Landscape Architect.

B. The Contractor shall be responsible for quality of concrete in place color and finish and control of cracking and spalling. All exposed concrete shall have a consistent color and finish and be free from uncontrolled cracking and spalling. If any concrete work is not consistent color and finish and be free from uncontrolled cracking and spalling it shall be removed, repaired or replaced as directed by the Landscape Architect.

3.15 GEOCOMPOSITE MATERIAL

A. Apply waterproofing geocomposite material conforming to the manufacturer's specifications to a minus 2 inches below finished soil grade on soil side of retaining walls, deepened concrete curbs retaining bio-retention basins and planters.

B. Install MFM Subseal 60 Sheet Membrane Prime-A-Seal Primer and Mastic+Plus where shown on drawings and as required by geotechnical engineer. Request review of installation of Membrane by geotechnical engineer before covering with soil.

3.16 CLEANING

A. Section 01 77 00 – Contract Closeout & Final Cleaning.

B. During construction, wash off work as quickly as possible when stains or splotches are unavoidable.

C. Upon completion, clean exposed surfaces carefully. Brushing and cleaning solution, if used, must be preceded and followed with a through rinsing of clear water. No sandblasting will be allowed to clean surfaces.

D. Remove from premises; equipment, debris and surplus material needed for, or resulting from, this work. Remove all concrete waste from planting areas and legally dispose of it.

E. All work shall be left in a condition satisfactory to the Landscape Architect.

F. Perform Work under this Section to keep affected portions of building site neat, clean, and orderly. Remove, immediately upon completion of Work under this Section, surplus materials, rubbish, and equipment associated with or used in performance. Be aware that failure to perform clean-up operations within 24 hours of notice by Landscape Architect will be considered adequate grounds for having work done by others at no added expense to the Owner

END OF SECTION

SECTION 32 17 20

SITE SIGNS

PART 1 - GENERAL

1.1 SCOPE

A. Provide all labor, material and equipment for installation of signs as shown on the drawings.

B. Related work specified elsewhere includes:

  1. Section 32 17 23 Signing, Striping & Markings

1.2 REQUIREMENTS AND STANDARDS

A. The Contractor shall furnish and install signs to comply with the drawings.

B. All accessories shall be installed as recommended by Manufacturer.

PART 2- MATERIALS

2.1 SIGNS

A. Provide and install vandal-resistant attachments. Refer to drawings and coordinate with Owner's Representative.

B. Regulatory Sign: As shown on drawings. Refer to drawings and coordinate with Owner's Representative. Submit Manufacturer's data. Final text as approved by owner. Provide quantity of signs as required on drawings.

C. No Dog Sign: As shown on drawings. Refer to drawings and coordinate with Owner's Representative. Submit Manufacturer's data. Final text as approved by owner. Provide quantity of signs as required on drawings.

E. Local Supplier: Interstate Traffic Control, 1700 Industrial Rd., Suite B, San Carlos, CA, telephone: 650-591-2300 or fax 650-591-8200; Thomas-Swan Sign Co, 1117 Howard Street, San Francisco, CA 94103. Phone: 415-621-1511 Fax: 415-621-0481 or approved equal.

2.2 GRAFFITI-RESISTANT COATINGS

A. Graffiti-Resistant Coatings: GCP 1000/Clear by Genesis Coatings, 800-533-4273 or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION OF SIGNS

A. Confirm location with Owner's Representative before installing. Install per drawings and manufacturer's data. Use vandal-resistant attachments.

B. Coordinate installation with graffiti-resistant coatings.

C. Install Graffiti-resistance coatings per manufacturer’s specifications.

3.2 CLOSEOUT

A. Clean up per General Conditions.

B. Include copies of the material submittals and manufactured material suppliers and installers name and telephone number in the Operations and Maintenance manuals as part of the closeout documents.

C. Include manufacturer’s warranty information of specified items with warranties.

END OF SECTION

SECTION 32 17 23

STREET & PARKING AREA SIGNING, STRIPING & MARKINGS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Cleaning and sweeping of pavements before application of markings.

B. Application of stripes and pavement markings.

C. Installation of traffic control signs.

D. Installation of wheel stops.

E. Restoration of existing improvements.

F. Cleanup and removal of debris.

G. The work shall include the provision of all materials, equipment and apparatus not specifically mentioned herein or noted on the plans but which are necessary to complete the work specified.

1.2 QUALITY ASSURANCE

A. Manufacturer's certificates showing conformance with this specification shall be delivered to the Engineer with each shipment of materials and equipment delivered to the job site.

B. Codes and Standards:

1. The standards, recommended methods, and tests contained in the publications cited below shall determine the standards for the work to be done hereunder unless otherwise specifically designated on the plans. The Contractor shall keep a copy of each document on the job site for reference.

   a. The State of California Department of Transportation Maintenance Manual, current edition.

   b. The State of California Department of Transportation Traffic Manual, July current edition.

   c. The regulations, standards, and tests of the State of California Materials and Research Division.

   d. The State of California Department of Transportation's Standard Plans and Standard Specifications, current edition.

   e. Markings per CalTrans standard plans current edition.

2. Pavement striping and markings shall be placed in the locations shown on the Plans and shall conform to the standards illustrated in the State of California Department of Transportation's Traffic Manual and Maintenance Manual.

3. Reference by manufacturers, brands or models is to establish type and quality of materials desired. Substitution of materials of equal quality may be permitted upon the prior written approval of the Owner.

1.3 JOB CONDITIONS

A. No striping shall be applied until pavement surfaces have been approved for marking by the Inspector.

B. Concrete shall be thoroughly cured before application of striping or marking thereon. No striping or marking shall be applied until concrete surfaces have been approved for marking by the Inspector.

PART 2 - PRODUCTS

2.1 TRAFFIC CONTROL SIGNS

A. Traffic control sign panels shall be of the type, shape, and pattern designated, and be of standard size unless noted on the detail drawings. Sign faces shall be reflectorized unless otherwise specified on the plans or detail drawings.

B. Posts for traffic control signs, unless designated to be mounted on traffic signal or electrolier standards, shall be two (2) inch I.D. standard wall steel galvanized pipe with vinyl clad or painted black, with one end finished to receive mounting cap and fittings.

2.2 TRAFFIC STRIPES

A. Traffic stripes, lines, and parking stripes shall conform to the provisions in Section 84-1, "General," and Section 84-3, "Painted Traffic Stripes and Pavement Markings" of the Standard Specifications and these Technical Specifications.

2.3 WHEEL STOPS

A. Material: Reinforced precast concrete having a minimum compressive strength of 3,000 psi after 28 days.

B. Size: 6’-0”

C. Pins: 5/8” diameter by 12” long steel pins.

D. Manufacturers: Old Castle Precast or Christy Concrete Products, Inc. (Fremont, CA) or equal.

PART 3 - EXECUTION

3.1 TRAFFIC CONTROL SIGNS

A. Traffic control signs shall be installed in conformance with the applicable requirements of the State of California Department of Transportation Maintenance Manual.

B. Mounting hardware for traffic control signs shall conform to the applicable requirements and specifications contained in the Standard Plans.

C. Concrete bases for traffic control sign posts shall be Class "B" Portland cement concrete of the shape and dimensions shown or called for on the Standard Plans and detail drawings.

D. Installation of roadside signs of the types and sizes and at the locations shown on the plans shall comply with the provisions of Section 56-4.03 of the Standard Specifications and these Technical Specifications.

E. After erection, damage to traffic sign faces shall be touched up or replaced.

3.2 RESTORATION OF EXISTING IMPROVEMENTS

A. Existing pavement, pavement markings, or other improvements removed or damaged due to the installation of roadway markers or traffic control signs shall be replaced in kind at no additional cost to the Contract.

B. Existing landscaping or planting removed, damaged, or disturbed due to the installation of roadway markers or traffic control signs shall be repaired or replaced in kind.

3.3 WHEEL STOPS

A. Install at locations indicated on drawings in accordance with manufacturer’s instructions and standard detail.

B. Fasten each wheel stop with two 5/8” diameter x 12” long pins to concrete or asphalt. Cap with epoxy sealant.

3.4 FINISHING ROADWAY AND CLEANUP

A. Finishing roadway and cleanup shall conform to the provisions in Section 22, "Finishing Roadway," of the Standard Specifications.

B. Upon completion of the installation of Roadway Markings and Accessories, Contractor shall thoroughly clean the work site of all waste, rubbish and construction debris of any nature.

C. Any surplus materials remaining upon completion of the work shall become the property of the Contractor unless otherwise specified herein or noted on the plans, and shall be removed from the work site by the Contractor and disposed of in a lawful manner.

END OF SECTION

SYNTHETIC TURF PLAYING FIELD

SECTION 32 18 13

PART 1 - GENERAL

1.1 SUMMARY

A. This work provided via separate CMAS contract.

B. Ground and floor finishes shall be stable, firm and slip resistant and shall comply with CBC 11B-302.

C. All general contractors, synthetic turf field sub-contractors and all turf field subcontractors performing all sub base preparation, grading and drainage infrastructure work must be experienced in the installation of synthetic turf systems for at least five (5) years. Failure to meet the requisite qualifications may result in the general contractors and sub-contractors being rejected as non-responsible.

D. All general contractors, synthetic turf field sub-contractors and all turf field subcontractors performing all sub base preparation, grading and drainage infrastructure work should have completed within the last (5) five years, five (5) synthetic turf field projects in Northern California greater than 80,000 square feet per field. Failure to meet the requisite qualifications may result in the general contractors and sub-contractors being rejected as non-responsible.

E. It shall be the responsibility of the successful Contractor to provide all labor, materials, equipment and tools necessary for the complete installation of a synthetic turf playing field system. The system shall consist of, but not necessarily be limited to, the following:

1. A permeable grass-like polyethylene pile blended fibers woven into a high strength composite backing.
2. A resilient sand and cork infill system and a resilient sand and olive core infill system.
3. High quality assurance provided by evidence of submittals, samples, testing, inspections, coordination with other work, 8-year warranty, maintenance manual, maintenance equipment, annual inspections and annual maintenance for the life of the warranty.
4. A maximum of G-max rating of 165 for the life of the warranty.

F. Coordinate with related work specified elsewhere includes:

1. Section 01 11 00 Summary of Work
2. Section 01 33 00 Submittals
3. Section 01 50 13 Construction Waste Management and Disposal
4. Section 01 56 16 Dust Control
5. Section 01 56 19 Noise Control

6. Section 01 71 23 Field Engineering

7. Section 01 77 00 Contract Closeout and Final Cleaning

8. Section 02 41 00 Site Preparation & Protection

9. Section 31 00 00 Earthwork

10. Section 31 25 00 Erosion Control

11. Section 32 11 13 Subgrade Preparation and Base Material

12. Section 32 13 13 Landscape Concrete

1.2 QUALIFICATIONS AND PRODUCT SUBSTITUTIONS

A. Approved synthetic turf products are listed in Article 2.1 of this section. Only pre-qualified Contractors approved by the manufacturer(s) as an installer of one or more of these products, or who subcontracts with a contractor approved by the manufacturer(s) as an installer of one or more of these products, may bid on the Project.

B. If a Contractor wishes to request a product substitution for the District's consideration in lieu of the synthetic turf product(s) listed in Article 2.1 of this section shall do so and show a product equal to the product specified in Article 2.1 and include submittals conforming to Article 1.3 B.1 through 1.3. B.9.

C. Request for deviations or substitutions from the specifications must be made in writing seven days prior to the bid date. Alternatives will be allowed only by addendum.

D. All Synthetic Turf sub-contractors bidding on this project must have a California license and be experienced in the installation, in Northern California, of synthetic turf systems for at least 5 years and have completed five (5) projects in Northern California of comparable size, type and complexity, in the past five (5) years.

1.3 SUBMITTALS

A. Comply with General Conditions.

B. Within 35 days of the Notice to Proceed, the Contractor shall submit:

   1. Qualifications of project manager and installation personnel.

   2. Manufacturer's specifications for materials and installation including height of exposed fiber, depth of infill, physical properties of infill, weight of infill, designated proportions of infill, seaming method and installation methods.

   3. Manufacturer's data and MSDS data on synthetic turf system seam adhesives.

   4. Schedule of installation for the District's review before starting.

   5. A currently valid certificate of compliance for the approved synthetic turf system from an independent laboratory such as Testing Services, Inc of Dalton, GA (706-226-1400) or other laboratory, pre-approved by the District, showing the following data:

    a. Pile Height, Face or Pile Weight and Total Fabric Weight, ASTM D5823 or D5848

    b. Total Backing Weight, ASTM D5848

    c. Grab Tear Strength, ASTM D5034

6. Certification of quantities of infill and source of infill for the field.

7. Certification from the Contractor, its listed turf contractor and the manufacturer to hold the District, Landscape Architect, and Architect harmless from infringement of any current patent issued for the synthetic turf system, fibers, backing, installation methods and vertical draining characteristics.

8. Submit manufacturer's data, photographs, maintenance manuals and operating instructions for synthetic turf maintenance equipment.

9. Samples:

    a. Synthetic Turf

        (1) Two (2) boxed fabric samples, minimum 7"x11", infilled to the proper depth.

        (2) Two (2) fabric only samples, minimum approximately 18" by 24" with seam joint, backing and perforations and a tufted-in white and yellow stripes, 4-inches wide.

        (3) Two (2) fabric only samples, minimum approximately 18" by 24" with seam joint, backing and perforations and an inlaid stripes of all contrasting colors to be used on the field including logo and text if applicable, 4-inches wide.

    b. Submit one-quart sample of infill material(s) and corresponding sieve analysis from a testing laboratory.

    c. Seam filament: 10-feet (if applicable).

10. Shop Drawings:

    a. Shop Drawings shall be prepared and contain all pertinent information regarding installation. PDF copies of these drawings shall be submitted to the District for approval prior to the manufacture and shipment of materials to the job site.

    b. Submit Drawings for:

        (1) Field Layout.

        (2) Field Marking Plan and Composite Striping Plan, layouts and details for soccer, baseball and softball showing field lines, markings, goals and bases and boundaries per project drawings. Show baseball and softball bases as white turf. Show soccer as yellow and blue turf.

        (3) Roll/Seaming Layout.

            (4) Methods of attachment, field openings and perimeter conditions.

11. Provide a copy of the 8-year, prepaid, non-prorated, third-party insured warranty and insurance policy information.

12. Provide a copy of a published independent safety study of the turf system.

C. The District's Testing Agency will submit reports on tests and inspections performed for the District, the Landscape Architect and the Contractor.

D. Prior to starting the installation of the approved synthetic turf, the Contractor shall submit a certification signed by the Contractor, its listed turf subcontractor, synthetic composite underlayment manufacturer's representative and drainage system installer, that installed base stone and drainage materials conform to specified requirements and system was successfully checked and tested prior to covering with the synthetic turf playing field.

E. Prior to shipment of the synthetic turf materials to the job site, at least 10% of the synthetic turf rolls shall be randomly sampled from the same lot and tested by a testing laboratory experienced in testing synthetic turf materials. The testing laboratory should be completely independent with no ties to the turf or component manufacturer. The testing shall include relevant tests such as Pile Composition, Pile Weight, Total Weight, Pile Height, Drainage Capacity, Tuft Bind (without infill), Grab/Tear Strength and UV resistance. The Contractor shall pay the costs of these tests. Submit copies of the test results to the District for review before shipping.

F. Prior to Final Acceptance, the Contractor shall submit to the District an executed copy of the Warranty documents and three (3) copies of Maintenance Manuals, which will include all necessary instructions for the proper care and preventative maintenance of the synthetic turf system, including, but not limited to, minor seam repairs and top-dressing with additional infill materials.

G. Prior to Final Acceptance, the Contractor shall submit to the District, a field information kit containing:

1. Turf sample from the specific manufacturing lot used with the manufacturer's lot reference number and tracking information.

2. Sand and cork samples with supplier product and contact information.

3. Seaming fabric and adhesive sample.

4. One (1) gallon of an industrial strength cleaning solution and cleaning instructions so that the District can safely clean the field of grease and oil.

H. Prior to Final Acceptance, the Contractor shall submit to the District, extra sand and cork in dry containers for top dressing and field maintenance.

1.4 QUALITY ASSURANCE

A. Reference and Standards.

1. General Conditions.

2. Perform work in accordance to all applicable laws, codes and regulations required by the Town of San Anselmo and County of Marin and the State of California

3. Reference to “Standard Specifications” shall mean the current Standard Specifications of the State of California, Business and Transportation Agency, Department of Transportation, CalTrans

4. California Code of Regulations, Title 24, current edition, also known as California Building Code (CBC)

5. ASTM D1335 - Standard Test Method for Tuft Bind of Pile Yarn Floor Coverings

6. ASTM D1557 - Test Method for Laboratory Compaction Characteristics of Soil

7. ASTM D1577 - Standard Test Method for Linear Density of Textile Fiber

8. ASTM D1682 - Standard Method of Test for Breaking Load and Elongation of Textile Fabrics

9. ASTM D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering

10. ASTM D418 - Standard Test Method for Testing Pile Yarn Floor Covering Construction

11. ASTM D4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity

12. ASTM D5034 - Standard Test Method of Breaking Strength and Elongation of Textile Fabrics (Grab Test)

13. ASTM D5848 - Standard Test Method for Mass Per Unit Area of Pile Yarn Floor Covering

14. ASTM D5874 - Standard Test Method for Determination of the Impact Value (IV) of a Soil

15. ASTM F355 - Standard Test Method for Shock-Absorbing Properties of Playing Surfaces

16. ASTM F1015 - Standard Test Method for Relative Abrasiveness of Synthetic Turf Playing Surfaces

17. ASTM F1936 - Standard Test Method for Shock-Absorbing Properties of North American Football Field Playing Systems as Measured in the Field

18. ASTM F1702 - Standard Test Method for Measuring Shock-Attenuation Characteristics of Natural Playing Surface Systems Using Lightweight Portable Apparatus

19. Most recent Rules and Interpretations of National Federation of High School Rules, American Youth Soccer Association (AYSO) and Little League Baseball, as applicable.

B. Stipulations:

1. Finish Surface Tolerance: 3/16-inch maximum variation in 10 feet.
2. All visible lines shall be square and true.
3. Seams shall not be visible and shall be seamed complete.
4. Infill shall be evenly distributed and a uniform depth.
5. Fibers of inlaid carpet pieces shall be flush with the rest of the carpet fibers and free of depressions, bumps or shadows.
6. The Contractor and its listed turf subcontractor shall review and accept the quality of the synthetic turf playing field sub-base and the drainage in place.
7. The Contractor and its listed turf subcontractor shall observe the installation of the base and drainage and shall comment on any problems or conflicts that may be discovered including:
    a. Review and accept the submittals for the synthetic turf base stone base and the drainage materials.
    b. Review planarity of the compacted turf subgrade and stone base.
    c. Submit certification signed by the Contractor and its listed turf subcontractor and drainage system installer that installed stone base and drainage materials conform to specified requirements and system was successfully checked and tested prior to covering with the synthetic turf playing field.

C. The Contractor and its listed turf subcontractor shall employ only qualified, experienced supervisors and technicians skilled in the installation of the synthetic turf system as specified herein.

D. The turf manufacturer for this installation must certify supervisory personnel for this project in writing.

E. The turf manufacturer must verify that their representative has inspected the installation and that the work conforms to the manufacturer's requirements.

F. Warranty: The Contractor and its listed turf subcontractor shall submit its Manufacturer’s and Installation Warranty and shall warrant the usability and playability of the synthetic turf system for its intended uses for an eight (8) year period commencing with the date of formal project acceptance by the District’s governing board. The warranty coverage shall not be pro-rated nor limited to the amount of the usage. The warranty shall be in the form attached to this section.

1. General: The warranty submitted must have the following characteristics:
    a. Must provide full coverage for eight (8) years from the date of formal project acceptance by the District’s governing board.
    b. Must warrant materials and workmanship.
    c. Must warrant that the materials installed meet or exceed the product specifications stated herein.

d. Must have a provision to either make a cash refund or to repair or replace such portion of the installed materials that are no longer serviceable in order to maintain a serviceable and completely playable surface.

e. The warranty shall not be prorated.

f. Must be a warranty from a single source covering workmanship and all self-manufactured or procured materials.

g. Contractor shall warrant defects in installation and workmanship for a period of eight (8) years from the date of formal project acceptance by the District's governing board.

G. Ongoing Tests & Inspections:

1. Contractor and Manufacturer shall examine the synthetic turf playing field(s) in regards to any claim made by the District.

2. Contractor and Manufacturer shall provide an annual report to the District notifying the District of all maintenance and warranty issues and recommending maintenance practices consistent with the warranty.

3. Contractor and Manufacturer shall be allowed access to inspect any claims made under this warranty. Any tests associated with a claim shall be done with notice to the District and results of said test shall be forwarded to the District.

1.5 DISTRICT TESTS

A. The District will select a qualified testing laboratory to take samples for testing during the course of the work as considered necessary. The District will pay costs for such tests. Contractor shall cooperate in taking tests and shall be responsible for notify the designated laboratory in sufficient time to allow taking of samples.

1.6 COORDINATION

A. Coordinate items of other trades. Contractor shall accept the synthetic turf playing field sub-base; and coordinate all accessories embedded in the synthetic turf playing field sub-base and for the provision of connections to adjacent materials necessary to the execution of the work of the trades.

1.7 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Ensure storage facilities are weather tight and dry.

B. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use.

1.8 SHOCK ABSORBENCY OF THE SYNTHETIC TURF SYSTEM

A. The synthetic turf system installation may be periodically tested by the owner for shock attenuation (G-max) properties in accordance with ASTM F1936 and F355, Method A, and G-max compliance standards.

B. Test locations: The installed system will be tested for G-max at locations defined in ASTM F1936 as modified within two (2) additional locations for the soccer field. At one (1) soccer goalmouth and at one (1) corner of a penalty box. All test locations will be offset approximately 12-inches from any fabric seam and all subsequent re-testing will be performed at the exact same locations as previous test locations for comparisons.

C. Test Frequency and G-max. The synthetic turf contracting party shall arrange and pay for an independent test lab to test the synthetic turf field for G-max compliance. At Project Acceptance, not to exceed 135 G's. In no event shall the G-max for the field exceed 165 during the warranty period.

1.9 MAINTENANCE DURING WARRANTY PERIOD

A. The maintenance during the warranty period shall be pre-paid as part of the construction contract.

B. Provide 16 visits to the site on an as needed basis to maintain the field during the warranty period. At each visit, certified technicians execute these procedures:
   1. Address any migration of infill.
   2. Take multiple infill depth measurements to verify surface planarity.
   3. Make minor warranted seam and inlay repairs.
   4. Add light infill to high traffic areas.
   5. Power clean field perimeter.
   6. Provide an annual written Pre and Post-Session field report.

C. During the last half of the warranty period provide care for grooming and fiber rejuvenation.

WARRANTY

District: Tamalpais Union High School District

Project Name: REDHILL COMMUNITY SPORTS PARK RENOVATION

Warranty: Contractor and Manufacturer warrant the synthetic turf playing field surface at

REDHILL COMMUNITY SPORTS PARK RENOVATION

for a period of eight (8) years from the date of formal project acceptance by the District's governing board against defects in materials and/or workmanship, including:

Ultra-violet degradation, fading greater than twenty percent (20%) of the original color, seam rupture or dislodgment or unusual shape or distortion in the field, either vertical or horizontal, due to dimensional instability of turf materials used, decrease in pile height by more than twenty percent (20%), decrease in face weight (without infill) by more than thirty percent (30%).

The system shall adhere firmly and completely to the perimeter anchoring system.

The system shall vertically drain a minimum of forty (40) inches per hour for a maximum of 24 hours continuously, without visible surface ponding.

Contractor and Manufacturer also guarantee that the G-Max level of its field will not exceed 165 for the duration of the warranty. If the reading does exceed 165 during the warranty period, the Contractor, its listed turf subcontractor and Manufacturer will take whatever measures necessary, at no cost to the District, to achieve G-Max test results to, or below, 165.

Contractor and Manufacturer will repair or replace, as it deems necessary, those materials, which exhibit such defects resulting from materials or workmanship, at no cost to the District.

This is a non-prorated material and labor warranty.

The synthetic turf playing field(s) shall be warranted for the designated uses as follows:

Discus
Field Hockey
Football
Jogging
Lacrosse
Marching band
Pedestrian traffic and other similar uses
Physical Education
Physical Exercises
Pneumatic rubber-tired maintenance and service equipment
Rugby
Soccer
Softball and Baseball

Limitations: The recommendations for proper maintenance of the surface as outlined in the

Maintenance Manuals provided by the Contractor and Manufacturer shall be considered in determining neglect or proper maintenance of the synthetic turf and shall be considered an integral part of this warranty.

Contractor and Manufacturer do not warrant against normal wear and tear, as determined by an independent lab specializing in synthetic turf. Contractor and Manufacturer also does not warrant against damage caused by improper use, neglect, vandalism, earthquakes, and floods, changes in water table or other acts of God. Home plate area, base paths and pitcher's mound which shall be 2 years instead of 8 years and there is no third-party insurance.

Inspection and Tests: Contractor and Manufacturer shall examine the synthetic turf playing field(s) at least once per year, beginning no longer than thirty (30) days from the one (1) year anniversary date of the formal project acceptance by the District's governing board.

Contractor and Manufacturer shall also examine the synthetic turf playing field(s) in regards to any claim made by the District.

Contractor and Manufacturer shall be allowed access to inspect any claims made under this warranty. Any tests associated with a claim shall be done with notice to the District and results of said test shall be forwarded to the District.

The Contractor and Manufacturer shall have shock attenuation tests conducted at their expense annually by an independent testing laboratory properties in accordance with ASTM F1936 and F355, Method A and deliver the test results to the District within sixty (60) days of the testing.

Claims: Contractor and Manufacturer shall repair or replace all or any portion of the surface, which may be determined to be defective.

In the event of the failure by the Contractor and Manufacturer to comply with the above mentioned conditions within fourteen (14) days after being notified in writing by the District, the Contractor and Manufacturer both hereby authorize the District to proceed to have such defective work repaired or replaced and made good at the Contractor and Manufacturer 's expense and the Contractor and Manufacturer shall honor and pay the costs and charges therefore within fourteen (14) days of the District's demand, without voiding this warranty.

Date of Acceptance: ______________________

Manufacturer	Synthetic Turf Contractor
By:	By:
Title:	Title:
Address:	Address:
	License Number:
Date:	Date:

PART 2 - MATERIALS

2.1 SYNTHETIC TURF SYSTEM

A. The synthetic turf system materials shall be in accordance with the following:

1. The acceptable product(s) for the synthetic turf system are summarized as follows:

a. The synthetic turf system infill shall be cork and dust free, rounded, silica sand.

b. The District has determined that the following synthetic turf system product meets or exceeds the specifications and is approved and acceptable:

(1) For Areas noted as Vertex on the Field: Synthetic Turf shall be FieldTurf Vertex Prime, Model: FTVTP-2-PureFill (cork) or pre-approved as manufactured by FieldTurf Tarkett. The product is a permeable in-filled synthetic grass that provides the look, the feel, and the playability of natural grass with respect to ball speed and bounce and maximum safety to athletes supplied by FieldTurf, International, 707-586-8873. NO KNOWN EQUAL.

PROPERTY	VALUE	UNIT	STANDARD
Code	FTVTP-50-PureFill	NA	NA
Yarn Structure 1	Ridged Monofilament / Field Green	Denier	D1.77
Yarn Denier 1 (Yarn linear density)	14,500	Denier	NA
Yarn Structure 2	Slit Film Summergreen	Denier	D1.77
Yarn Denier 2 (Yarn linear density)	5000	Denier	D1.77
Pile height (1)	2.0	Inches	D5823
Pile weight (Face weight)	39	0Z/SY	D5848
Primary backing weight	7+	0Z/SY	D5848
Secondary backing weight (Finger Unit)	14+	0Z/SY	D5848
Total weight	60	0Z/SY	D5848
Stitch gauge (tuff spacing)	3/4	Inches OC	D5793
Tuff bind	8+	Lbs/Force	D1335
Pill burn test	Pass		D2859
Water Permeability	>40	Inches/Hour	DIN 18-035
PureFill cork infill (1)	1.1	Lbs/SF	
Sand infill (1)	4.5	Lbs/SF	
Total infill (1)	5.6	Lbs/SF	
Depth of infill (1)	1.25 (+/- 0.125)	Inches	
Exposed height of fiber (1)	0.75	Inches	
UV Performance	>80% retained tensile strength after 5,000 hours	NA	NA
UV warranty	8 years	Watts	ISO 4892-2

(2) For Areas noted as Vintage on the Warning Tracks and Home Plate Area: Synthetic Turf shall be FieldTurf

Vintage 40 Baseball, Model: Vintage 40 - PureSelect Olive Infill (olive cores) or pre-approved as manufactured by FieldTurf Tarkett. The product is a permeable in-filled synthetic grass that provides the look, the feel, and the playability of natural grass with respect to ball speed and bounce and maximum safety to athletes supplied by FieldTurf, International, 707-586-8873. NO KNOW EQUAL.

PROPERTY	VALUE	UNIT	STANDARD
Code	Vintage-40-PureSelect	NA	NA
Yarn Structure 1	Slit Film	Denier	D1.77
Yarn Denier 1 (Yarn linear density)	10,000+	Denier	NA
Yarn Structure 2	Texturized Thatch	Denier	D1.77
Yarn Denier 2 (Yarn linear density)	5000	Denier	D1.77
Pile height (1)	1.6	Inches	D5823
Pile weight (Face weight)	50	0Z/SY	D5848
Primary backing weight	8+	0Z/SY	D5848
Secondary backing weight (Finger Unit)	20	0Z/SY	D5848
Total weight	78	0Z/SY	D5848
Stitch gauge (tuff spacing)	3/8	Inches OC	D5793
Tuff bind	8+	Lbs/Force	D1335
Pill burn test	Pass		D2859
Water Permeability	>40	Inches/Hour	DIN 18-035
PureSelect Olive Infill olive infill (1)	1.5	Lbs/SF	
Sand infill (1)	3.5	Lbs/SF	
Total infill (1)	5.0	Lbs/SF	
Depth of infill (1)	0.875 (+/- 0.125)	Inches	
Exposed height of fiber (1)	0.75	Inches	
UV Performance	>80% retained tensile strength after 5,000 hours	NA	NA
UV warranty	8 years	Watts	ISO 4892-2

(Footnote 1) Per manufacturer's specifications and as approved through submittal process.

(4) Or approved equal in conformance with Article 1.2 of this section. Contractors shall only bid on the project based on a District-approved product stated above or identified by the District in an addendum as an approved equal.

c. The following yarn, carpet and system properties are minimums. The Contractor and its listed turf subcontractor may exceed these minimum properties subject to acceptance of the Landscape Architect and no other deviations from this section. A variation of +/- 5% listed property values is within normal manufacturing tolerances.

d. A complete synthetic grass system, consisting of not less than 2 inch long, with rows spaced no less than ¾” apart in Vertex and 3/8” apart in Vintage, tufted into a double primary porous backing and a micro-porous secondary coating, with no holes punched in the backings.

e. A resilient infill system, consisting of a graded dust-free silica sand on the bottom; and a layer of cork or olive cores on top, designed to provide the look, feel, and safety of optimally maintained natural grass. The infill shall be filled so that there is a void of ¾” to the top of the fiber.

f. The carpet’s primary backing shall be a double-layered polypropylene fabric treated with UV inhibitors. The secondary backing shall consist of an application of porous, heat-activated urethane to permanently lock the fiber tufts in place. Perforated carpet backing shall not be acceptable. Perforation—backed carpet, (that is, a carpet fully coated and drained by means of melted, burned or punched holes), shall not be acceptable.

g. Cork must be natural cork ranging in size from 1 to 3 mm and have a bulk density of 300 kg/m3 (+/- 15%).

h. Sand must be dust free, rounded, silica sand; any other sand will not be accepted.

i. Thread for sewing seams of turf shall be as recommended by the synthetic turf manufacturer.

j. Glue for inlaying lines and markings shall be as recommended by the synthetic turf manufacturer. Seams between turf panels must be sewn. Inlaid markings may not be installed by means of cutting through the fabric and adhering the colored turf to a separate reinforcing tape or cloth. Rather, inlaid markings (that cannot be tufted into the fabric), shall be installed by means of shearing out the existing green fiber and laying in a new piece of colored fabric into a bed of suitable “hot melt” adhesive placed directly on the original turf backing material. Systems that cut through the turf fabric for inlaid lines are not acceptable due to the fact that such a procedure shall weaken the structural integrity of the turf fabric backing.

p. The carpet shall be installed with a 3/4” fiber exposure.

q. The carpet shall be delivered in nominal 15-foot wide rolls. The rolls shall be of sufficient length to go from touchline to touchline. Head seams, between the touchlines, will not be acceptable.

r. All fields of play lines for soccer, baseball, softball, lacrosse and other designations shall be inlaid or tufted to permanently lock the fiber tufts in place. The lines, and marks for baseball and softball shall be white and the lines for soccer shall be yellow, and blue. The field shall be predominately green.

s. Lines and markings shall be as shown on the approved submittal drawings (mandate) and also conform to NFHS rules and be tufted or inlaid so as to be permanently marked.

t. All components and their installation method shall be designed and manufactured for use on outdoor athletic fields. The materials shall be able to withstand full climatic exposure in the San Francisco Bay Area and be resistant to water, insect infestation, rot, fungus, and mildew; to ultra-violet light and heat degradation, and shall have the basic characteristic of flow through vertical drainage allowing free movement of surface run-off through turf where such water may flow to the permeable sub-base and into the field’s underground drainage system.

u. The finished playing surface shall appear as mowed grass with no irregularities and shall afford excellent traction for conventional non-metallic athletic shoes of all types. The finished surfaces shall resist abrasion and cutting from normal use with conventional athletic shoes of all types. The system shall be ideal for soccer, softball, football, baseball, rugby, lacrosse, intramural, PE classes and recreational use.

v. Turf seams shall be carefully constructed to minimize long-term maintenance requirements. Seams shall be custom cut on site using suitable equipment and proven installation techniques. Seams shall be sewn or glued per manufacturer's recommendations.

w. Seaming filament: Thread for sewing seams of turf shall be as recommended by the Synthetic Turf Manufacturer.

2.2 SYNTHETIC TURF MAINTENANCE EQUIPMENT

A. Field Sweeper: the Sweep-Right. Groomer: Groom-Right or equivalent (Phone 1-800-724-2969), at the discretion of the Manufacturer.

B. Submit manufacturer's data, photographs, maintenance manuals and operating instructions.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Verify that all sub-base, drainage, grading and leveling is complete prior to installation.

B. The surface to receive the synthetic turf must be inspected by the Installer, and prior to the beginning of installation, the Installer must accept the sub-base in writing. The acceptance will depend on the owner providing the installer with test results indicating that compaction, planarity and permeability are in compliance with the synthetic turf manufacturer's specifications. The surface must be perfectly clean as installation commences and shall be maintained in that condition throughout the process. Acceptance shall be for tolerance to grade (1/4 inch in 10 feet in all directions and 0-1/2" from design grade). Installer shall be responsible for verifying the planarity of the base.

C. The Contractor and its listed turf subcontractor shall strictly adhere to the installation procedures provided by the manufacturer. Any variance from these requirements must be accepted in writing by the manufacturer's onsite representative and submitted to the District, verifying that the changes do not in any way affect the warranty.

1. The Contractor and its listed turf subcontractor shall coordinate his work with other and concurrent work and participate in pre-construction and pre-installation conferences.

2. The Contractor and its listed turf subcontractor shall field verify the dimensions and layout of the synthetic turf playing field. The surface tolerance shall not exceed 1/4 inch over 10 feet.

3. Verify final elevations using a "string line" method: lengths of 100' pulled taught with high/low spots marked and hand-dressed prior to importation of the synthetic composite underlayment.

4. The turf manufacturer and contractor must accept the rock base and drainage in writing prior to the installation of the synthetic grass system. The surface tolerance shall not exceed 1/4 inch over 10 feet. The synthetic grass system is to be installed directly over the properly prepared rock base. Extreme care should be taken to avoid disturbing the rock base, both in regard to compaction and planarity. It is suggested that a 2-5 ton static roller is on site and available to repair and properly compact any disturbed areas of the aggregate base.

5. The full width rolls of turf shall be laid out across the field. The seams shall be sewn or glued as per manufacturer’s specifications and head seams, other than at sidelines, shall not be acceptable. All seams in the soccer field shall be perpendicular to the length of the field. Seams shall be flat, tight, and permanent with no separation or fraying. At seams, the gap between the fibers should not exceed the gauge of the tufting. Permanent playing lines and markings shall be laid out and incorporated in the turf as shown on the drawings.

6. Carefully measure and install sides seams, complete corners and cut in inlaid lines and patterns as required per manufacturer’s specifications and approved submittals.

7. Carefully measure and install edge at edge of field.

8. Before permanently fastening the synthetic turf to its edges, check for uniform planarity, square and make corrections to deformities as required.

9. Secure the synthetic turf playing field to the recycled plastic lumber perimeter attachment with a nail gun, as per manufacturer’s specifications, at maximum one-foot (1’) intervals.

10. Install the infill system per manufacturer’s specifications with uniform mechanical properties, including density, compliance and thickness to provide a consistently smooth grass-like surface without dips or humps or other irregularities that are rejected by the Landscape Architect.

11. The completed synthetic turf field shall be uniformly brushed with a motorized nylon rotary broom and the infill material immediately and uniformly installed with a minimum four-foot (4’) width drop spreader. The infill shall be applied in multiple lifts as per manufacturer’s specifications to the depth and quantity lifts as per manufacturer’s specifications and approved submittal. Brush the infilled area between each lift as per manufacturer’s specifications.

12. Neatly trim, dress and install the synthetic turf around boxes and items that are installed in the turf surface. Provide approved surface treatment for removable caps in the synthetic turf as required.

3.2 CLEAN UP

A. Contractor shall provide the labor, supplies and equipment as necessary for final cleaning of surfaces and installed items.

B. All usable remnants of new material shall become the property of the District.

C. The Contractor shall keep the area clean throughout the project and clear of debris.

D. Surfaces, recesses, enclosures, etc. shall be cleaned as necessary to leave the work area in a clean, immaculate condition ready for immediate occupancy and use by the District.

3.3 PROJECT CLOSEOUT

A. The Contractor and its listed turf subcontractor shall provide the following, or the Contractor shall ensure that the turf manufacturer provides the following:

1. The Contractor and its listed turf subcontractor shall provide the required testing data to the District to show that the finished field meets or exceeds the required shock attenuation.

2. The Contractor and its listed turf subcontractor shall provide grooming and sweeping once per month for the first three months after acceptance of the turf and the make required adjustments to the infill system after the first seasonal rains to adjust for settling.

3. The turf manufacturer and Contractor shall inspect the existing synthetic turf maintenance equipment and make recommendations for adjustments for optimum maintenance.

4. The Contractor and its listed turf subcontractor shall train the District's personnel how to use sweeper and groomer to, remove debris, remove foreign substances, and maintain the synthetic turf. After synthetic turf installation is complete, the Contractor shall arrange for a demonstration performed by the synthetic turf manufacturer's representative and the equipment representative to train the District's personnel in the operation and maintenance of the equipment. The District's personnel shall provide the vehicle (golf cart or tractor) to pull the sweeper for demonstration purposes. Scheduling of demonstration shall be at the convenience of the District's personnel within three (3) months after completion of the installation process.

5. The turf manufacturer and contractor shall provide the warranty to the District as specified in this section.

6. Prior to final payment for the synthetic turf, the Contractor shall submit to owner notification in writing that the field is officially added to the annual policy coverage, guaranteeing the warranty to the Owner. The insurance policy must be underwritten by an "AM Best" A rated carrier and must reflect the following values:

   a. Pre-Paid 8-year insured warranty.

   b. Insured Warranty coverage must be provided in the form of one (1) single policy.

   c. No maximum per claim coverage amount.

   d. Minimum of twenty million dollars ($20,0000,000) annual aggregate

   e. Must cover full 100% replacement value of total square footage installed, minimum of $8.00 per sq ft. in 2022 dollars (in case of complete product failure, which will include removal and disposal of the existing surface)

   f. Policies that include self insurance or self retention clauses shall not be considered.

    g. Policy cannot include any form of deductible amount.

    h. Sample policy must be provided at time of bid to prove that policy is in force. A letter from an agent or a sample Certificate of Insurance will not be acceptable.

7. The turf manufacturer and Contractor shall provide maintenance manuals to the District as specified in this section.

8. The turf manufacturer and Contractor shall provide a field information kit to the District as specified in this section.

9. The turf manufacturer and Contractor shall provide one-gallon of an industrial strength cleaning solution and cleaning instructions so that the District can safely clean the field of organics, grease and oil.

10. The turf manufacturer and Contractor shall provide extra sand and cork and olive cores infill in dry containers for top dressing and field maintenance.

END OF SECTION

SECTION 32 31 13

CHAIN LINK FENCING

PART 1 - GENERAL

1. 1 SECTION INCLUDES

A. Scope: Provide labor, materials and equipment for the installation of the chain link fences and gates as shown on the drawings and as specified. The contractor shall supply a total color coated chain link fencing system of the design, style and strength defined herein. The system shall include all components (i.e., framework, chain link fabric, gates and fittings) required.

B. Related work specified elsewhere includes:

1. Section 01 11 00 Summary of Work
2. Section 12 93 00 Site Furnishings
3. Section 31 00 00 Earthwork
4. Section 32 11 13 Subgrade Preparation and Base Material
5. Section 32 13 13 Landscape Concrete
6. Section 32 17 20 Site Signs
7. Section 33 40 00 Site Drainage

1.2 ACCESSIBILITY COMPLIANCE

A. Openings: Openings in path of travel must comply with exit door requirements.

B. Gates: Gates in path of travel must comply with California Building Code exit door requirements.

C. Bottom of Gates: Bottom of Gates in path of travel to have a smooth uninterrupted surface and comply with California Building Code exit door requirements.

1.3 SUBMITTALS

A. Per General Conditions. Submit for approval six (6) copies of manufacturer's information and shop drawings for fencing, gates, posts, rails, tension wire, fabric, hardware and accessible hardware.

B. Submit two (2) samples showing finish of fence framing system, hardware and fence fabric.

1.4 SOILS REPORT

A. A soil investigation report has been prepared for the project. Refer to Section 00 31 32 Geotechnical Data.

B. The reports are available in the office of the Landscape Architect and the Construction Manager for inspection by the Contractor. Unless otherwise specified, it is intended that all work be performed in accordance with the provisions of these reports.

C. According to the Geotechnical Engineer, drilled piers may encounter ground water. Excavations for drilled piers may require casings and installation of concrete by means of pumping under the direction of the Geotechnical Engineer.

1.5 SOILS BORINGS

A. Subsurface soils investigations have been made at the site and logs of the test holes are available with the Soils Report. Such investigations have been made for the purposes of design only, and neither the Landscape Architect, the Owner, nor the Soils Engineers guarantee adequacy or accuracy of the data, or that data are representative of all conditions to be encountered. Such information is made available for general information only and shall not relieve the Contractor of the responsibility for making his own investigations.

1.6 PROJECT CONDITIONS

A. Coordination: Coordinate this work with the work of other Sections to avoid delay and interference with other work.

B. Protect excavations by shoring, bracing, sheeting, underpinning, or other methods as required to prevent cave-ins or loose dirt from entering excavations. Barricade open excavations and post warning lights at work adjacent to public streets and walks.

C. Promptly repair damage to adjacent facilities caused by operations. Cost of repair at Contractor's expense.

D. Promptly notify the Inspector of unexpected subsurface conditions.

E. Excavations and Sidewall Support: Excavations to depths greater than 4.5 feet will require shields or shoring per OSHA regulations and OSHA recommendations and procedures.

F. Excavations Stabilization and Dewatering Considerations: In instances where excessive caving or unstable wall conditions are encountered, the Geotechnical Engineer may recommend that trench shields be used both for worker safety and to maintain integrity of the trench. Minimizing the length of excavation open at one time will also minimize excavation instability. Also, for this condition, the Geotechnical Engineer recommends the need to keep excavations open as short a time as possible before backfilling. The risk of excavation wall squeezing and bottom heave increases with time.

1.7 QUALITY ASSURANCE

A. The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified.

1.8 ASTM REFERENCES

A53 / A53M - 10	Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

A 90/A90M-11	Test Method for Weight (Mass) of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings
A 569/A569M-977	Specification for Steel, Carbon (0.15 Maximum, Percent), Hot-Rolled Sheet and Strip Commercial Quality
A1011 / A1011M - 10	Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
B 117-11	Practice for Operating Salt Spray (Fog) Apparatus
B 6-09	Specification for Zinc
B 117-97	Practice for Operating Salt Spray (Fog) Apparatus
D 1499-05	Practice for Operating Light- and Water-Exposure Apparatus (Carbon-Arc Type) for Exposure of Plastics
D 3359-09e2	Test Methods for Measuring Adhesion by Tape Test
E 8-98	Test Methods for Tension Testing of Metallic Materials
E 8M-11	Test Methods for Tension Testing of Metallic Materials (Metric)
E 376-11	Practice for Measuring Coating Thickness by Magnetic-Field or Eddy-Current (Electromagnetic) Test Methods
F 567-11a	Practice for Installation of Chain-Link Fence
F 626-96a	Specification for Fence Fittings
F 668-11	Specification for Poly(Vinyl Chloride) (PVC)-Coated Steel Chain-Link Fence Fabric
F 900-11	Specification for Industrial and Commercial Swing Gates
F 934-96	Specification for Standard Colors for Polymer-Coated Chain Link Fence Materials
F 969-96 (2008)	Practice for Construction of Chain-Link Tennis Court Fence
F 1043-11a	Specification for Strength and Protective Coatings on Metal Industrial Chain Link Fence Framework
F 1184-94	Specification for Industrial and Commercial Horizontal Slide Gates

1.9 PRODUCT HANDLING AND STORAGE:

A. Upon receipt at the job site, all materials shall be checked to ensure that no damages occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage and to protect against damage, weather, vandalism and theft.

PART 2 - MATERIALS

2.1 GENERAL

A. Manufacturer: Framework and fabric for color chain link fence systems shall conform to Polyolefin Coated Chain Link Fencing, Permafused II™, Master Halco, Inc., 4000 W. Metropolitan Drive, Suite 400, Orange, CA 92868, Phone (800) 229-5615 Fax (714) 385-0107, http://www.fenceonline.com, Ameristar or equal.

2.2 STEEL FRAMEWORK

A. Steel pipe - Type I: ASTM F 1083, standard weight schedule 40; minimum yield strength of 30,000 psi (205 MPa); sizes as indicated. Hot-dipped galvanized with minimum average 1.8 oz/ft² (550 g/m²) of coated surface area.

B. Polyolefin Coated finish: In accordance with ASTM F1043, apply supplemental color coating of minimum 10 mils (0.254mm) of thermally fused polyolefin in black color to match fabric.

C. The color of all framework shall be black.

D. Bottom of fence shall be provided with a bottom rail.

2.3 FABRIC:

A. Polyolefin elastomer coating, 6 mil (0.15mm) to 10 mil (0.25mm) thickness, thermally fused to zinc-coated steel core wire: Per ASTM F668 Class 2b. Minimum Core wire tensile strength of 75,000 psi (517 MPa).

B. Size: Helically wound and woven to height of as indicated on Drawings, 2” diamond mesh, 9-gauge wire gauge, (Steel core wire size is 11 gauge and the coated wire size is 9 gauge.

C. Color: Black ASTM F934.

D. Height and Mesh Size: Fabric height is noted on drawings with a diamond mesh size of 2 inches.

E. Selvage: Top edge knuckled. Bottom edge knuckled.

2.4 POLYOLEFIN COATED ACCESSORIES

A. Chain link fence accessories: [ASTM F 626] Provide items required to complete fence system. Galvanize each ferrous metal item and finish to match framing. Fittings should match Master Halco specifications.

B. Post caps: Formed steel, cast malleable iron, or weather tight closure cap for tubular posts. Provide one cap for each post. Where top rail is used, provide tops to permit passage of top rail.

C. Top rail and rail ends: Pressed steel per ASTM F626, for connection of rail and brace to terminal posts.

D. Top rail sleeves: 7” (178 mm) expansion sleeve with a minimum .137” wire diameter and 1.80” length spring, allowing for expansion and contraction of top rail.

E. Wire ties: 9 gauge [0.148” (3.76 mm)] galvanized steel wire for attachment of fabric to line posts. Double wrap 13 gauge [0.092” (2.324 mm)] for rails and braces. Hog ring ties of 12-1/2 gauge [0.0985” (2.502 mm)] for attachment of fabric to tension wire.

F. Brace and tension (stretcher bar) bands: Pressed steel, minimum 300 degree profile curvature for secure fence post attachment. At square post provide tension bar clips.

G. Tension (stretcher) bars: One piece lengths equal to 2 inches (50 mm) less than full height of fabric with a minimum cross-section of 3/16” x 3/4” (4.76 mm x 19 mm). Provide tension (stretcher) bars where chain link fabric meets terminal posts.

H. Tension wire: Thermally fused polyolefin applied to zinc coated steel wire: Per ASTM F 1664 Class 2 b, 6 gauge, [0.192” (4.88 mm)] diameter core wire with tensile strength of 75,000 psi (517 MPa).

I. Truss rods & tightener: Steel rods with minimum diameter of 5/16” (7.9 mm). Capable of withstanding a tension of minimum 2,000 lbs.

J. Nuts and bolts are galvanized but not polyolefin coated. Use touch up paint to color coat nuts and bolts.

2.5 SETTING MATERIALS

A. Concrete: Minimum 28 day compressive strength of 3,000 psi (20 MPa).

2.6 SWING GATES

A. Swing gates shall be manufactured and coated to meet the requirements of ASTM F900. The color of all gates shall be black. Polyolefin Coated finish: In accordance with ASTM F1043, apply supplemental color coating of minimum 10 mils (0.254mm) of thermally fused polyolefin in black color to match fabric.

B. Gate Frames: standard steel pipe, 1-7/8" outside diameter.

C. Gate Kick Plates: steel plate and as shown on the drawings.

D. Accessible Gate Latch: As required to meet California Building Code requirements for accessible access. Submit manufacturers cut sheet and sample.

E. All lock keys shall be keyed alike. Provide locks keyed alike to what the school uses.

F. Gate Tension Bars: 1/4" x 3/4" tension bars tied to frame at 14" spacing with 11-gauge, 1" wide steel bands and 3/8" diameter bolts and nuts.

PART 3 - EXECUTION

3.1 PREPARATION

A. All new installation shall be laid out by the contractor in accordance with the Drawings.

3.2 INSTALLATION

A. Install chain link fence in accordance with ASTM F567. Fence posts shall be set at spacings of a maximum of 8’ o.c. Gate posts shall be spaced according to the gate openings specified in the construction plans. The “Site Concrete” section of this specification shall govern post base placement and material requirements. Install fabric on the side towards the pool and attach with wire ties or clip to line posts at 14 inches o.c. and to rails, braces and tension wire at 24 inches o.c.

3.3 POST

A. Locate terminal post at each fence termination and change in horizontal or vertical direction of 30° or more.

B. Set posts evenly spaced, plumb and true to lines with top line uniform in concrete to depths herein specified. Brace end, corner, pull and gateposts with same material as top rail and truss to line posts with 3/8" rods and tighteners. Line posts shall be evenly spaced 8' or less apart. Top rail shall pass through line post tops and form a continuous brace within each stretch and be securely fastened to terminal posts. Splices in top rail shall be made with couplings at approximately 20' spacing. Each post to be set in a concrete footing sized in accordance with the drawings. Set top of footing as shown on drawings, hold below concrete mowband and concrete border. Extend post to 6" from bottom of concrete footing. Gate post footings to be per manufacturer's recommendations.

3.4 GATES

A. Gate openings shown in plans to be face-to-face dimension of gate posts. Swing of gates to be as shown. Contractor shall verify grade conditions at bottom of gate and submit shop drawings that respond to field conditions.

B. Gates to be provided with same fabric as fence. Fabric to have knuckled selvage top and bottom. Shop drawings to indicate necessary rail sizes and trussing appropriate for gate opening. Gates to be supplied with accessible positive-type latching devices. Double gates to have a plunger rod, catch and gate catch.

C. Gates shall be structurally stable vertically and laterally, in any position.

D. Install gates level, plumb, and secure for full opening without interference. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust gate to operate smoothly, easily, and quietly throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

E. Provide gates with same fabric as fence. Supply gates with positive-type latching devices with provisions for padlocking. Double leaf gates shall have a center plunger rod, catch and semi-automatic gate latch. After hinges are placed, final adjustments made, and bolts tightened, the hinge clamp and gate post at each location shall be mutually drilled and tapped, and 1/4" machine bolt set to lock hinge in position. This applies to all hinges

3.5 FABRIC

A. Fabric Attachment: Fabric shall be attached to line posts with fabric bands or clips spaced approximately 14" apart, and to top rails and tension wires with wire ties spaced 24" apart. At all corners and vertical ends of fabric, install stretcher bars banded to posts and gate frames at 24" maximum.

B. Attach all fence fabric to the playing side of the fence.

3.6 RAILS

A. Splices at top rails shall be made with couplings at approximately every 20'. Coupling shall produce a continuous brace of railing from end to end of each stretch of fence. Every fifth coupling in a stretch shall be fitted with a heavy spring to allow for expansion and contraction of rail. Rails shall be rigidly clamped to end and corner post with appropriate fittings. Bottom rail shall be clamped at each post. Stretch all fabric tight, free from sags and bulges.

3.7 FASTENINGS

A. Provide 1/4” maximum exposure on bolts. Provide smooth bolt ends.

3.8 CLEANUP

A. At completion, leave project clean and ready for use.

1. Legally dispose of waste materials, debris, and rubbish off the site.

2. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from exposed and semi-exposed surfaces.

3. Repair, patch, and touch up marred surfaces to specified finish, to match adjacent surfaces.

4. Broom clean paved surfaces, rake clean planting areas and other surfaces of grounds.

3.9 CLOSEOUT

A. Include copies of the material submittals and manufactured material suppliers and installers name and telephone number in the Operations and Maintenance manuals as part of the closeout documents.

END OF SECTION

SECTION 32 90 00

PLANTING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Furnish labor, material and equipment for the installation of the planting work and the maintenance as shown on the drawings and as specified**.**

1.2 RELATED SECTIONS

A. Section 00 31 19 Existing Conditions

B. Section 00 31 32 Geotechnical Data

C. Section 01 11 00 Summary of Work

D. Section 02 41 00 Site Preparation & Plant Protection

E. Section 31 00 00 Earthwork

F. Section 31 25 00 Erosion Control

G. Section 32 11 13 Subgrade Preparation and Base Material

H. Section 32 13 13 Landscape Concrete

1.3 QUALITY ASSURANCE

A. Qualifications:

1. Experience: Assign a full-time employee to the job as foreman for the duration of the Contract with a minimum of four (4) years experience in landscape installation and maintenance supervision, with experience or training in turf management, entomology, pest control, soils, fertilizers and plant identification.

2. Labor Force: Provide a landscape installation and maintenance force thoroughly familiar with, and trained in, the work to be accomplished to perform the task in a competent, efficient manner acceptable to the Project Inspector.

B. Requirements:

1. Supervision: The foreman shall directly supervise the work force at all times and be present during the entire installation. Notify Project Manager of all changes in supervision.

2. Identification: Provide proper identification at all times for landscape maintenance firm's vehicles and a labor force uniformly dressed in a manner satisfactory to Project Inspector.

C. Reference Standards:

1. Manufacturer's specifications.

2. "Sunset Western Garden Book," Lane Publishing Co., Menlo Park, California; current edition.

3. "American Standards for Nursery Stock," American Association of Nurseryman, 230 Southern Building, Washington, D.C. 20005.

4. Geotechnical Report: (Included for reference in Appendices of the Project Manual).

5. Weed Control Methods Handbook, The Nature Conservancy, Tu, M., Hurd, C. & J.M. Randall. 2001. http://tncweeds.ucdavis.edu.

D. Plant Material Standards:

1. Quality and Size of Plants: Conform to the State of California Grading Code of Nursery Stock, No. 1 grade. Use only nursery-grown stock that is free from insect pests and diseases.

2. Comply with federal and state laws requiring inspection for plant diseases and infestations. Submit inspection certificates required by law with each shipment of plants, and deliver certificates to the Project Inspector. Obtain clearance from the County Agricultural Commissioner as required by law, before planting plants delivered from outside the County in which planted.

3. Certification from nursery (s) and seed company at the time the contract is initiated and later, if there are any updates, provide certification to identify who will be letting the nursery contract to provide plant material and seed.

E. Testing Agency:

1. Soil and Plant Laboratory, Inc., 1101 S. Winchester Blvd, Suite G-173, San Jose, CA 95128; Tel. (408) 727-0330.

2. Sam Ferro, Turf Diagnostics & Design, Inc., 613 E. 1st Street, Linwood, KS 66052, (913) 723-3700, Fax: (913) 723-3701.

3. Soil Foodweb Oregon, LLC. 728 SW Wake Robin Ave, Corvallis, OR; Tel. (541) 752-5066.

1.4 SUBMITTALS

A. Product Data: Manufacturer's current catalog cuts and specifications of the following.

1. Mulch

2. Hydroseed materials

3. Seed Mixes

4. Mycorrhiza

5. Fertilizers

6. Landscape Drainage Materials

B. Samples:

1. Organic Mulch: Submit two 1-quart samples.

2. Seed Mixes: Submit 1-pound labeled samples.

C. Certificates of Compliance for the following:

1. Quantity of fertilizer to be delivered to site and incorporated into soil preparation and maintenance. Demonstrate compliance by showing invoices to prove the purchase of fertilizer in sufficient quantity to cover the entire landscape project at the specified application rates.

2. Within 35 days of Notice to Proceed, provide a letter from the contactor certifying that all seed and plant materials are available and a list of sources.

3. For grass seed--prior to seeding, provide a letter of certification, original Association of Official Seed Analysts (AOSA) seed test results.

D. Topsoil Analysis: After acceptance of rough grading and topsoil placement, obtain five representative samples of topsoil taken from site locations and submit to an accredited Soils Laboratory for "agricultural suitability" analysis report. Upon approval of the Laboratory's report by the Landscape Architect, the recommendations in the report shall become a part of the Specifications and the quantities of soil amendment; organic source of fertilizer and other additives shall be adjusted to conform to the report. Request Testing Laboratory to send one copy of test results directly to Construction Manager.

1.5 PROJECT/SITE CONDITIONS

A. Site Visit: At beginning of work, visit and walk the site with the Project Inspector to clarify scope of work and understand existing project/site conditions.

PART 2 - PRODUCTS

2.1 PLANTS

A. Seed shall be in conformance with the California State Seed Law of the Department of Agriculture. Each seed bag shall be delivered to the site sealed and clearly marked as to species, purity, percent germination, dealer’s guarantee, and dates of test. Prior to seeding at the request of the Architect, the Contractor shall provide a letter of certification, original Association of Official Seed Analysts (AOSA) seed test results.

B. Seed shall be a minimum 97% pure & Minimum 85 % germination. Crop seed less than 1.25 % & weed seed less than .75%. No Noxious weeds.

2.2 FERTILIZERS

A. Commercial fertilizer, pelleted or granular form, conform to the requirements of Chapter 7, Article 2, of the Agricultural Code of the State of California for fertilizing materials as follows:

Potassium Sulfate (0-0-50)

Soil Sulfur: Tiger Organic 0-0-0-90 Sulfur

Treble Superphosphate: 0-48-0

Gypsum

Biosol 7-2-1 fertilizer

AM120 inoculant

If commercial fertilizer having this analysis is not obtainable, other similar commercial fertilizer may be used providing it meets the acceptance of the Architect.

2.3 OTHER GRASSES

Seed Mix A: Available from Pacific Coast Seed, 925-373-4417, S&S Seeds or Hedgerow Farms, 530-662-6847. Native Erosion Control Mix 45 Total Lbs./Acre plus Nurse Crop 9 Total Lbs acre, plus Wildflower mix in addition to the grass seed in the hydroseed application. And Nutrition and Growth enhancers: 1000 lbs Biosol 7-2-1 fertilizer and 60 lbs of AM120 inoculant per acre.

Native Erosion Control Mix 45 Total Lbs./Acre

Scientific Name	**Common Name**	**Lbs/Acre Drill Seed**	**Lbs/Acre Hydroseed**	**Maintenance Broadcasting**
Bromus carinatus	California Brome	-	-	3
Elymus glaucus	Blue Wildrye	-	-	2
Festuca microstachys	Three Weeks Fescue	-	-	2
Trifolium willdenovii	Tomcat Clover	-	-	2
	Total	45	45	9

Nurse Crop 9 Total Lbs./Acre

Scientific Name	**Common Name**	**Lbs/Acre Drill Seed**	**Lbs/Acre Hydroseed**	**Maintenance Broadcasting**
Vulpia microstachys	Pacific fescue	6	6	3
Lupinus bicolor	Miniature lupine	3	3	2
	Total	9	9	5

Broadcast Wildflower mix in non-hydroseed areas where noted on the drawings. Include wildflower mix with Mix A as noted below:

Wildflowers	Marin Meadows Mix	8	2
	Total	8	2

Wildflowers: Marin Meadows Mix: Available from Larner Seeds.com, 415-868-9407 or Hedgerow Farms, 530-662-6847. 8 pounds of Pure Live Seed per acre, plus seed for maintenance broadcasting.

Marin Meadows Mix Species	**Common Name**
Castilleja exserta ssp. exserta,	Purple Owl's Clover

Clarkia amoena	Farewell-to-Spring
Clarkia rubicunda	Ruby Chalice Clarkia
Collinsia heterophylla	Chinese houses
Eschscholzia californica ssp. californica	California Poppy
Gilia capitata	Globe Gilia
Gilia tricolor	Bird's Eye Gilia
Lasthenia glabrata	Goldfields
Layia platyglossa	Tidy Tips
Limnanthes douglasii (when in stock),	Douglas Meadowfoam
Linanthus grandiflorus	White Seafoam
Lupinus bicolor	Miniature Lupine
Lupinus nanus	Sky Lupine
Nemophila maculata	Five Spot, Calico Flower
Nemophila menziesii	Baby Blue Eyes

2.4 MULCH

A. Bark Mulch: Pro-chip decorative mulch, small, 2-inch maximum size in any direction, redwood color, or equivalent as accepted by the Landscape Architect. Available at BFI Organics, 1601 Dixon Landing Road, Milpitas, CA, 408-945-2836.

B. Sheet mulch materials as noted on the drawings.

C. Submit samples of organic mulches to the Landscape Architect. Resubmit until acceptable to Project Inspector, at no extra cost.

2.5 ON-SITE TOPSOIL

A. Refer to Demolition Plan.

B. Satisfactory topsoil shall be free of subsoil, clay, lumps, stones and other objects over 1" in diameter, and without weeds, roots and other objectionable material.

C. If herbicide contamination is suspected, then a radish/ryegrass growth trial must be performed. Consult with Inspector prior to decision to test or not.

2.6 HYDROSEED MULCH

A. Fiber Mulch: EcoFibre or approved equal. Green colored, fibrous, wood cellulose containing no growth or germination inhibiting factors and manufactured in such a manner that after addition and agitation in slurry tanks with fertilizer, seed, water and other approved additives, the fibers in the material become uniformly suspended to form a homogeneous slurry; and that when hydraulically sprayed on the ground, the material forms a blotter-like ground cover impregnated uniformly with seed; and which, after application, allows the absorption of moisture and rainfall to percolate to the underlying soil.

B. Cellulose: Certified to indicate that the laboratory and field testing of the product has been accomplished and that it meets all of the foregoing requirements based on testing. Weight specifications of this material from suppliers and for all applications refer only to air dry weight content.

C. Absolute air dry weight is based on the normal standards of the Technical Association of the Pulp and Paper Industry for wood cellulose and considered equivalent to 10%

moisture. Supply packages of the cellulose fiber marked by the manufacturer to show the air-dry weight content.

2.7 HYDROSEED STABILIZING AGENT

A. A mixture of 100% organic water soluble alginic acids derived from cold-water kelps, such as M-binder or approved equal.

2.8HYDROSEED MIX

A. Incorporate the following seed uniformly in hydromulch at the specified rates per acre. Provide seed of the latest crop, labeled in accordance with the California Food Agricultural Code with the following ingredients per acre:

Wood Fiber: 2,000 lbs/acre
Stabilizer: 100 lbs/acre
Treble Superphosphate (0-48-0): 130 lbs/acre
Potassium Sulfate (0-0-50): 200 lbs/acre
Soil Sulfur: 300 lbs/acre
Biosol 7-2-1 fertilizer: 1000 lbs/acre
AM120 inoculant p60 lbs/acre.
Seed rate as specified

2.9 MYCORRHIZA PLANTING BACKFILL

A. MycoApply® All Purpose Granular available from Mycorrhizal Applications, Inc www.mycorrhizae.com, PO Box 1181 Grants Pass, OR 97528, Telephone 866-476-7800, or 541.476.3985 fax, 541.476.1581.

2.10 STORM DRAINAGE PIPE

A. Corrugated High Density Polyethylene (CHDPE) may be substituted for Polyvinyl Chloride (PVC) Pipe where PVC pipe is noted on the drawings.

B. Polyvinyl Chloride (PVC) Pipe: PVC pipe and fittings shall meet the extra strength minimum of SDR-35 of the requirements of ASTM Specification D3034. Joints shall be rubber ring for Storm Drainage Pipe. Manufactured by J-M Manufacturing, Stockton, CA, (1-800-621-4404), or accepted equal.

1. PVC Smooth Wall Perforated Drain Pipe: size as noted on the drawings and manufactured to meet CalTrans Standard Specification Section 68 and AASHTO M278, or accepted equal. Color: white.

2. Storm Drain Pipe: SDR-35. Size as noted on the drawings and manufactured to meet Caltrans standard specifications. Color: white.

C. Corrugated High Density Polyethylene (CHDPE) Storm Drain Pipe: CHDPE solid wall pipe and fittings shall be N-12 drainage pipe with N-12 IB WT pipe joint assembly as manufactured by Advanced Drainage Systems, Inc. Tel. (800) 821-6710 or accepted equal. Local sales representative: Jim Winslow, 510-913-2211.

D. Corrugated High Density Polyethylene (CHDPE) Perforated Drain Pipe: Perforated CHDPE pipe and fittings shall be N-12 Series 65 WT Corrugated HDPE Pipe and fittings as manufactured by Advanced Drainage Systems, Inc., Tel. (800) 821-6710, or accepted equal. Local sales representative: Jim Winslow, 510-913-2211.

2.11 VENTS & CLEAN OUTS

A. As noted on drawings, or accepted equal.

2.12 WILDFLOWER MIX

A. As specified under grasses in this section and as shown on Drawings.

2.13 EROSION CONTROL NETTING

A. New, with a uniform, open plain weave, flame-retardant mesh. The mesh shall be (natural brown-tan) (dyed green) and made from unbleached single jute yarn. The yarn shall be of loosely twisted construction and shall not vary in thickness by more than one-half its normal diameter. Furnish jute mesh in rolled strips to meet the following requirements:

1. Width: 48 inches, with a tolerance of one-inch wider or narrower.
2. Not less than 78 warp ends per width.
3. Not less that 41-weft end per yard.
4. Weight shall average 1.22 pounds per linear yard, with a tolerance of 5 percent heavier or lighter.

PART 3 - EXECUTION

3.1 EXAMINATION

A. General: Verify that existing site conditions are as specified and indicated before beginning work under this section.

1. Grades: Inspect to verify grade of planting areas.

B. Unsatisfactory Conditions: Report in writing to Owner's Representative.

C. Acceptance: Beginning of installation means acceptance of existing conditions by installer.

D. Coordination: Coordinate with other trades for topsoil stripping and planting soil protection so that adequate, healthy, friable and acceptable topsoil is provided consistent with this section.

3.2 PREPARATION

A. Protection:

1. Locate sewer, water, irrigation, gas, electric, phone and other pipelines or conduits and equipment prior to commencing work.
2. Be responsible for proper repair to utilities, walls, pavements and other site improvements damaged by operations under this section.
3. Pay for repairs made by contractor(s) designated by Owner.
4. Protect existing woody roots, shrubs and trees to remain.

5. Protect existing soil and slopes that exceed 3:1 slope. Do not disturb grade of slopes steeper than 3:1

B. Grass Removal: Remove surviving clumps of grass and dispose off-site. Rip and cross rip the existing soil 12" deep and till the dead organic matter into the existing soil.

C. Surface Grade: Remove grass, weeds, debris and rocks larger than 1". Dispose of accumulated debris.

D. Runoff: Take measures and furnish equipment and labor necessary to control the flow, drainage, and accumulation of water to run off the grounds as is intended by the grades.

E. Erosion Control: Take measures and furnish equipment and labor necessary to control and prevent soil erosion, blowing soil and accumulation of wind-deposited material on the site throughout duration of work.

F. Irrigation System: coordinate installation of new system as required.

G. Install landscape drainage as noted on drawings and specified in Section 33 40 10.

3.3 WEED REMOVAL

A. Inspect planting areas and remove and dispose of all invasive weeds, base rock and other foreign material, including soils contaminated with cement or other materials or debris, including the following invasive weeds. Request photographs of invasive weeds if required for identification. Refer to Weed Control Methods Handbook, The Nature Conservancy, Tu, M., Hurd, C. & J.M. Randall. 2001. https://www.invasive.org/gist/products/handbook/methods-handbook.pdf

Botanical Name	**Common Name**
TREES	
Acacia spp.	acacia
Ailanthus altissima	tree of heaven
Eucalyptus spp.	gum
Ficus carica	fig
Fraxinus uhdei	ash, evergreen
Juglans regia, Juglans californica var. hindsii	walnut, English or black
Myoporum laetum	Myoporum
Olea europaea	olive
Pinus radiata	Monterey pine
Platanus acerifolia	London plane tree
Populus nigra 'Italica'	Lombardy poplar
Prunus dulcis	almond
Prunus spp.	flowering plum, fruitful varieties
Quercus ilex	holly oak
Robinia pseudoacacia	black locust
Schinus spp.	pepper trees
Tamarix spp.	tamarisk, salt cedar
Ulmus spp.	elm
SHRUBS	
Acacia spp	acacia

Arundinaria, Chimonobambusa, Phyllostachys, etc.	bamboo, running types
Arundo donax	giant reed
Cortaderia selloana, C. jubata	pampas grass, jubata grass
Cotoneaster spp.	cotoneaster
Cytisus scoparius	broom, Scotch
Digitalis purpurea	foxglove
Genista monspessulana, previously Cytisus monspessulanus	broom, French
Ligustrum lucidum	glossy privet
Melissa officinalis	lemon balm
Pennisetum setaceum; purple variety "Cupreum" is sterile and acceptable	fountain grass
Pyracantha spp.	Pyracantha
Rubus discolor	Himalayan blackberry
Spartium junceum	broom, Spanish
Ulex europaea	gorse
GROUNDCOVERS, VINES	
Acacia spp	acacia
Arctotheca calendula	Cape weed
Carpobrotus edulis, C. chilensis, Mesembryanthemum spp.)	ice plants
Cotoneaster spp.	Cotoneaster
Delairea odorata, previously Senecio mikanioides	ivy, Cape
Hedera canariensis	ivy, Algerian
Hedera helix	ivy, English
Mentha spp.	mint, any kind including pennyroyal, peppermint, spearmint
Pennisetum clandestinum	kikuyu grass
Pyracantha spp.	Pyracantha
Source: Santa Clara Valley Water District, May 2001	UPDATE LIST?
OTHERS (2007)	
Centaurea solstitialis	yellow star thistle
Conium maculatum	poison-hemlock
Cynodon dactylon	Bermuda grass
Echium Candicans (fastuosum)	pride-of-Madeira
Elaeagnus angustifolia.	Russian-olive
Foeniculum vulgare	fennel
Raphanus sativus	radish
Tropaeolum majus	garden nasturtium
Urtica Dioica	stinging nettle
Zantedeschia Aethiopica	calla lily

B. Clear the planting, seed and mulch bed areas within the limit of work of all objectionable plant material, to include roots, snags, brush, grass, weeds, and similar undesirable vegetation and any other debris found at the site not specified as improvements to be included as part of this project. All such materials shall be removed from the site and disposed of in an acceptable manner.

C. In addition to the clearing of vegetation growth, the area shall be grubbed to a depth of six inches (6") below finish grade of debris and rocks over one inch (1") in size. Said material shall be removed from the site and disposed of in an acceptable manner.

D. Dispose offsite, any site soils from areas on which are growing any noxious weeds such as Fennel, Morning Glory, Sorrel, or Bermuda grass.

3.4 ONSITE SOIL PLACEMENT

A. Onsite Soil Placement:

1. Provide onsite soil as noted on the drawings.
2. Protect improvements from damage due to landscape work.
3. Existing Soil Excavation: where onsite soil is required, excavate existing soil, as required, to clear existing vegetation and roots, meet finish grades and allow for soil preparation.
4. Undistributed onsite soil may remain in place where it conforms to finish grades.
5. Inspect planting areas and remove all base rock and other foreign materials. Rip all planting areas in two directions full depth of compacted fill, to a minimum of 12-inches, into undisturbed native soil prior to backfilling. Scarification of any planting area, which cannot be accomplished with a tractor, shall be accomplished by an alternative method approved by the Landscape Architect to the specified depth to ensure proper drainage.
6. Uniformly distribute and spread onsite soil backfill in planting areas in layers not to exceed 24" and compact to a maximum of 85% relative compaction.
7. When the planting soil differs in clay and silt content from the subsoil it is to be placed upon, install a 4-inch thick lift of planting soil on the subgrade and rototill into the subgrade 6-inches deep before installing the remaining required planting soil.
8. Do not work planting soil in a wet or muddy condition or dump or spread in areas where subgrade is not in proper condition.
9. Water settling, puddling, and jetting of fill and backfill materials, as a compaction method, is not acceptable.
10. Maintain moisture content of materials during compaction operations within required moisture range to obtain indicated compaction density.
11. Provide a minimum of 12 inches depth of onsite soil.

3.5 FINE GRADING AND SOIL PREPARATION FOR SLOPES EXCEEDING 3:1 SLOPE

A Before proceeding with the work: Carefully inspect all areas and verify all dimensions and quantities. Immediately inform the Landscape Architect of any discrepancy between the drawings and specifications and actual conditions and secure acceptance to proceed.

B. Inspect planting areas and remove and dispose of all invasive weeds, base rock and other foreign material including soils contaminated with cement or other materials or debris. Request photographs of invasive weeds if required for identification.

C. Planting operations shall be performed only during periods when beneficial results can be obtained. When excessive moisture or other unsatisfactory conditions prevail, the work shall be stopped until conditions are satisfactory.

D. Thoroughly wet down the planting areas to settle the soil. Allow soil to dry so as to be workable.

E. Protect tree root systems from damage caused by equipment, runoff, and spillage of noxious materials and storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.

F. Do not store construction materials, debris, or excavated material inside tree root zones.

G. Do not permit vehicles within tree root zones; prevent soil compaction over root systems.

H. Planting Soil Preparation:

1. Inspect planting areas and remove all rock, other foreign material and other objects over 1" in diameter. Scarify planting areas in two directions to a maximum of 1 inch.
2. Do not work planting soil in a wet or muddy condition or dump or spread in areas where subgrade is not in proper condition.
3. Water settling, puddling, and jetting of fill and backfill materials, as a compaction method is not acceptable.
4. Maintain moisture content of materials during compaction operations within required moisture range to obtain indicated compaction density.
5. Provide a minimum of 1 inch depth of friable soil in planting areas.

I. Planting area soil of planting areas shall be in a loose, friable condition prior to planting.

J. Drag to a smooth, even surface. Grade to form all swales, pitch to drain to ensure uniform surface drainage. Areas requiring grading include adjacent transition areas which shall be uniformly level or sloped between finish elevations.

K. Roll, scarify, rake and level as necessary to obtain true, even planting surfaces. Remove rocks, sticks and debris 1 inch or larger. Secure acceptance of the grade by the Landscape Architect before any planting.

L. Scarify all planting areas that become compacted prior to planting.

3.6 EROSION CONTROL NETTING

A. Use in conditions that exceed 3:1 slope and as otherwise required.

B. Install jute mesh loosely up and down the slope in accordance with manufacturer's specifications and as follows. Bury the top edge of jute netting in a 12” deep trench. Fit the soil surface contour and hold in place with 12-inch long, 11-gauge (minimum) steel wire staples driven vertically into the soil at 18- to 24-inch spacing. Jute mesh strips shall overlap along all edges at least 6 inches. Ends of side strips shall be buried into the soil at least 6 inches. Drive staples along edges to securely anchor mesh to ground.

3.7 FINE GRADING AND SOIL PREPARATION FOR AREAS FLATTER THAN 3:1 SLOPE

A. Before proceeding with the work: Carefully inspect all areas and verify all dimensions and quantities. Immediately inform the Landscape Architect of any discrepancy between the drawings and specifications and actual conditions and secure acceptance to proceed.

B. Inspect planting areas and remove and dispose of all invasive weeds, base rock and other foreign material including soils contaminated with cement or other materials or debris; Request photographs of invasive weeds if required for identification.

C. Planting operations shall be performed only during periods when beneficial results can be obtained. When excessive moisture or other unsatisfactory conditions prevail, the work shall be stopped until conditions are satisfactory.

D. Thoroughly wet down the planting areas to settle the soil. Allow soil to dry so as to be workable.

E. Planting Soil Preparation:

1. Inspect planting areas and remove all rock, other foreign material and other objects over 1" in diameter. Rip all planting areas in two directions full depth of compacted fill to a minimum of 12 inches.
2. Do not work planting soil in a wet or muddy condition or dump or spread in areas where subgrade is not in proper condition.
3. Water settling, puddling, and jetting of fill and backfill materials, as a compaction method is not acceptable.
4. Maintain moisture content of materials during compaction operations within required moisture range to obtain indicated compaction density.

F. Planting area soil of planting areas shall be in a loose, friable condition prior to planting.

G. Drag to a smooth, even surface. Grade to form all swales, pitch to drain inlets, curb, etc., to ensure uniform surface drainage. Areas requiring grading include adjacent transition areas which shall be uniformly level or sloped between finish elevations.

J. Roll, scarify, rake and level as necessary to obtain true, even planting surfaces. Remove rocks, sticks and debris 1/2 inch or larger in size in turf areas and 1 inch or larger in ground cover areas. Secure acceptance of the grade by the Landscape Architect before any planting.

K. Scarify all planting areas that become compacted prior to planting.

3.8 GRASS SEED PLANTING

A. Before proceeding with the work: carefully inspect all areas and verify all dimensions and quantities. Immediately inform the Landscape Architect of any discrepancy between the drawings and specifications and actual conditions and secure approval to proceed.

B. Planting operations shall be performed only during periods when beneficial results can be obtained. When excessive moisture or other unsatisfactory conditions prevail, the work shall be stopped until conditions are satisfactory.

C. Thoroughly wet down the planting areas to settle the soil and confirm irrigation coverage and operation. Allow soil to dry so as to be workable.

D. Drag to a smooth, even surface. Grade to form all swales, pitch to catch basins, streets, curb, etc., to ensure uniform surface drainage. Areas requiring grading include adjacent transition areas, which shall be uniformly level or sloped between finish elevations.

E. Hold finish grade and/or mulch surface in planting areas below adjacent pavement surfaces, tops of curbs, manholes, etc., as shown on the drawings.

F. Soil shall be in a loose, friable condition prior to planting. Scarify all planting areas that become compacted prior to planting. The key to success is to ensure the seed has contact with the soil. Scratching the soil with steel rakes or dragging a bar with nails or spikes is key to making sure the seed lands on the soil surface.

G. Drill seed may be used in lieu of hydroseeding for areas that are generally flat and accessible for drill seeding.

H. Apply the seed just before there is a good chance of rain in November or December.

I. Broadcast Mycorrhiza at a rate of 2 pounds per 1,000 square feet on the soil surface that is to receive seed. Broadcast when it will not be disturbed by wind.

J. Hydraulic Equipment: use a commercial-type hydroseeder with a built-in agitation system and an operating capacity sufficient to agitate, suspend and homogeneously mix slurry. Use distribution lines large enough to provide even distribution of the slurry over the ground. Pump must be capable of exerting up to 150 psi at the nozzle and the slurry tank have a minimum capacity of 1,000 gallons and be mounted on a traveling unit to place the slurry tank and spray nozzles within sufficient proximity to the areas to be seeded in order to provide uniform distribution without waste.

K. Mixing: mix the slurry preparation on site. Begin by adding water to the tank when the engine is at half throttle. When the water level has reached the height of the agitator shaft, establish good re-circulation and add seed, then fertilizer, followed by wood pulp mulch. Add the wood pulp mulch only after the seed and when the tank is at least 1/3 filled with water. Open engine throttle to full speed when the tank is half filled with water. Add all wood pulp mulch by the time the tank is 2/3 to 3/4 full. Spray immediately when the tank is full with a uniform, visible coat, using the green color of the wood pulp as a guide.

L. Application:

   1. Secure approval of area to be hydroseeded from Inspector prior to application.

   2. Install per manufacturer’s specifications.

   3. Use experienced operators of hydromulching equipment for application and apply slurry mix in sweeping motion to form a uniform mat at specified rate, keeping hydromulch within areas designated.

   4. Do not use slurry mixture that has not been applied within four hours of mixing, and remove from site.

5. After application, do not operate any equipment over the covered area.

M. Watering: Water from natural rainfall.

N. Maintenance broadcasting: during seed establishment period scarify soil and reseed and water bare areas to establish a full stand of grass.

3.9 MULCH

A. Mulch planting areas with sheet mulching materials and bark mulch to a 3-inch depth. Use bark mulch.

3.10 WILDFLOWER MIX PLANTING

A. Include as part of hydroseed mix and broadcast where noted on drawings. Broadcast the wildflower seed on the mulch layer after the pre-emergent herbicide has last its viability.

3.11 WATERING

A. Water from natural rainfall.

3.12 VENTS and CLEANOUTS

A. Install plumb, level and square to adjacent structure or paving or as otherwise directed by Inspector.

B. Connect to PVC pipe and make a complete watertight connection.

3.13 SUBSURFACE DRAINS

A. Install subsurface drains where indicated on the drawings and backfill with permeable material as specified. Provide not less than 3" of permeable material under pipe. Bell and spigot, and tongue and groove concrete pipe shall be laid without mortar in the joints, and lengths shall be pressed firmly together to prevent infiltration of fine material. Lay all pipe perforations down. Where subsurface drains connect to site drainage or plumbing systems, verify inverts of connections and lay pipe accordingly to drain.

3.14 DITCHES AND SWALES

A. Construct ditches and swales in the areas designated to convey storm water to the storm drainage facilities.

3.15 MAINTENANCE OF PLANT MATERIAL

A. Maintain plants from time of delivery to site until final acceptance of project.

3.16 PRE-MAINTENANCE PERIOD REVIEW AND APPROVAL OF PLANTING

A. Receive approval of the installed planting prior to commencement of planting establishment maintenance period. Notify the Project Manager a minimum of seven (7) days prior to requested review. Before the review, complete the following:

1. Complete all construction work.

2. Present all areas neat and clean with all weeds removed.

3. Complete all turf areas.

4. No partial approvals will be given.

3.17 PLANTING ESTABLISHMENT MAINTENANCE

A. General Requirements:

1. Use Bay-Friendly Landscape Maintenance practices to minimize waste, protect air and water quality, conserve energy and water, and protect natural ecosystems (refer to Bay-Friendly Landscape Guidelines, www.BayFriendly.org).

2. The planting establishment maintenance period required shall be 60 calendar days and start after certification of the project as substantially complete per Section 01 77 00. Refer to drawings for planting sequence requirements.

3. A longer period may be required if the plant material is not acceptably maintained during the maintenance period. The maintenance period may be suspended at any time upon written notice to the Contractor that the landscaping is not being acceptably maintained, and the day count suspended until the landscape is brought up to acceptable standards as determined by the Project Inspector.

4. Planting establishment maintenance immediately follows, coincides with, and is continuous with the planting operations, and continues after all planting is complete and accepted; or longer where necessary to establish acceptable stands of thriving plants.

5. Protect all areas against damage, including erosion and trespass, and provide proper safeguards. Maintain and keep all temporary barriers erected to prevent trespass.

6. Keep all walks and paved areas clean. Keep the site clear of debris resulting from landscape work or maintenance.

7. Repair all damaged planted areas, and replace plants and reseed or re-sod immediately upon discovery of damage or loss. Broadcast seed grasses to supplement sparse areas and areas the have been damaged or have eroded.

8. Check sprinkler systems at each watering; adjust coverage and clean heads immediately. Adjust timing of sprinkler controller to prevent flooding.

9. Maintain adequate moisture depth in soil to insure vigorous growth.

10. Keep Contract areas free from weeds by cultivating, hoeing or hand pulling. Use of chemical weed killers will not relieve the Contractor of the responsibility of keeping areas free of weeds over 1-inch high at all times.

11. If needed, coppice native grass container material in fall or as otherwise directed.

B. Seed Maintenance:

1. Maintain during the entire establishment period.

2. Seed shall be well established, free of bare spots and weeds, and of a “sod-like” quality to the satisfaction of the Landscape Architect prior to Final Acceptance.

3. Maintain constant moisture to a depth of eight inches (8").

4. Keep seed areas free of undesirable weeds and grasses by the application of suitable selective weed killers or hand pulling. Use Integrated Pest Management practices that use the least toxic practices.

5. Re-seed all damaged areas as soon as evident.

6. Repair any hollow, settled or eroded areas by filling, rolling and reseeding or re-seeding.

3.18 FINAL PLANTING REVIEW AND ACCEPTANCE, PER SECTION 01 77 00

A. At the conclusion of the planting establishment period, schedule a final review. On such date, all project improvements and all corrective work shall have been completed. If all project improvements and corrective work are not completed, continue the planting establishment, at no additional cost to the Owner, until all work has been completed. This condition will be waived by the Owner under such circumstances wherein the Owner has granted an extension of time to permit the completion of a particular portion of the work beyond the time of completion set forth in the Agreement.

B. Submit written notice-requesting review at least 10 days before the anticipated review.

C. Prior to review, weed and rake all planted areas, repair plant basins, mow and edge turf, clear the site of all debris and present in a neat, orderly manner.

D. Acceptance of Seeded Areas: Final acceptance will follow final approval of the punch list and the following criteria:

1. Satisfactory Seeded Area: 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 square feet.

3.19 WARRANTY AND REPLACEMENT

A. Warrant all seeding to be in a healthy thriving condition until the end of the maintenance period; and deciduous trees beyond that time until active growth is evident.

B. Replace all dead plants and plants not in a vigorous condition immediately as directed by the Landscape Architect at Contractor's expense. Install replacement plants before the final acceptance at the size specified.

C. Warrant all plant material for a period of one year after final acceptance by the District of the maintenance work against defects in the plant prior to installation. In General: Maintenance period will start at the substantial completion, per Section 01 77 00. Project acceptance and warranty period will occur at the conclusion of the Maintenance and District Acceptance of the project.

D. Warrant plant installation and maintenance by Contractor against defects for a period of one year from date of final acceptance by District .

END OF SECTION

Redhill Community Sports Park Renovation

Tamalpais Union High School District

APPENDIX A

CARDUCCI
ASSOCIATES

MPEG
MILLER PACIFIC
ENGINEERING GROUP

July 28, 2022
File: 1049.052altr.doc

Carducci & Associates
555 Beach Street, Floor 4
San Francisco, California 94133

Attn: Mr. Bill Fee

Re: Geotechnical Design Recommendations
Synthetic Turf Resurfacing
Redhill Community Park
San Anselmo, California

Introduction & Project Description

We are pleased to present our geotechnical recommendations for the planned synthetic turf resurfacing project for Redhill Community Park located in San Anselmo, California. The project location is shown on Site Map, Figure 1. We understand the project includes resurfacing the existing synthetic turf field, constructed in 2009; replacing a poorly performing retaining wall; constructing a new ADA access ramp and repaving the existing parking lot.

Our work was performed in accordance with our Agreement dated June 8, 2022. The purpose of our services is to aid in the geotechnical aspects of the design and construction of the project. The scope of our services includes utilizing existing subsurface information to provide recommendations to re-surface the field, providing lateral earth pressures to design the new retaining wall; and providing grading recommendations.

Regional Geology

Regional geologic mapping[1] indicates the site is underlain by alluvium (approximately 65- to 145-million years old). This unit generally consists of a mixture of sands, silts, and clays that have been deposited by water action on the valley floor. Fill is indicated as composing the slopes on the north and south sides of the site.

Existing Conditions

The proposed project site is currently developed as a synthetic field. The existing synthetic turf field was constructed in 2009 and is currently in poor condition and is beyond its design life, typically 8 to 10-years. The existing subsurface drainage system consists of a top and bottom rock drainage course on top of flat panel strip drains arranged in a herring bone configuration. These flat panel drains convey collected surface water to perimeter subdrains and subsequently to the city storm drain system. The working condition of the existing drainage system is currently unknown.

---

[1] Smith, T.C. Rice, S.J. and Strand, R.G., "Geology of the Upper Ross Valley and the Western Part of the San Rafael Area, Marin County, California": A Digital Database Version 1.0, California Geological Survey, Map Scale 1:12,000

Field Exploration and Laboratory Testing

We performed a subsurface exploration on September 8th and 15th, 2004 which included eight soil borings drilled with truck-mounted drilling equipment. The approximate boring locations are shown on the Site Plan, Figure 2. The soils encountered in our borings were logged in the field and samples were obtained for laboratory testing. The results of our subsurface exploration are presented, along with Soil and Rock Classification Charts, in Appendix A on Figures A-1 through A-12. Laboratory testing of samples from the exploratory borings included moisture content, dry density, and unconfined compressive strength. The results of these tests are presented on the boring logs. Laboratory testing of bulk, disturbed samples from the exploratory borings included R-Value testing with the results presented Figure A-13.

Subsurface Conditions

The soils within the project site generally confirm the mapped geology. The site is blanketed with a layer of fill consisting of low to medium plasticity, medium stiff, sandy clay. Beneath the fill is a layer of alluvial soils consisting of medium to high plasticity, medium stiff, silty, and sandy clays and low plasticity, very stiff, silty, and gravelly clays. Boring 5 encountered weathered Franciscan Mélange bedrock underlying the alluvial soil layer, approximately 20 feet below the ground surface at the time of the exploration. The Franciscan Mélange is variable in strength, consistency, and weathering, but generally becomes stronger and harder with depth.

Groundwater was not observed in any of the borings at the time of our exploration. However, our borings were not left open for an extended period to allow groundwater levels to equalize. Typically, groundwater levels fluctuate seasonally with higher levels anticipated during the winter/rainy season.

Discussion and Recommendations

Based on our experience with similar projects, it is our opinion that construction of a new synthetic turf playfield is feasible from a geotechnical engineering standpoint. The primary geotechnical issues at the project site are improving the existing filed drainage and providing a playing surface with the industry standard G-Max range of 120 and 180 g.

Synthetic Turf G-Max

The hardness of a field is measured by its G-Max value. This value is a measure of the g-forces (g) absorbed in a 20-pound object falling 24-inches onto a playing surface. A G-Max value of 200 g is considered the maximum safety threshold for a playing surface. An industry standard G-Max range for a safe playing surface is between 120 to 180 g. The g-max value is influenced by the infill type and the drainage layer.

Synthetic Turf Infill

Synthetic turf has historically been infilled with crumb rubber or a combination of sand and crumb rubber. Recently, the infill trend is shifting from crumb rubber and moving to cork and/or coconut fiber. Crumb rubber infill tends to produce fields that have G-Max values within the safety guidelines, between 120 and 180 g. However, cork and/or coconut fiber infilled fields tend to produce higher G-Max values and typically require a shock pad underlying the turf to produce acceptable G-Max values. As with all synthetic turf playing surfaces, G-Max values tend to increase with age and routine maintenance and testing is recommended to prolong the design life within the safety standards.

Synthetic Turf Drainage

An existing top and bottom rock drainage system underlies the existing synthetic turf field. It is unclear how the existing drainage system is currently operating. However, if the new field design will utilize the existing drainage system, we should perform field percolation tests on various areas of the field to evaluate its performance. Additionally, the existing perimeter subdrain and existing surface trench drain should be inspected, and flushed if required, to determine/restore its performance.

Based on our understanding of the project conditions and experience with similar projects, we anticipate the new synthetic turf field will contain cork/coconut fiber infill which will require a shock pad to provide a safe playing surface. Many shock pads provide vertical drainage to allow surface water to percolate into the underlying subsurface drainage system. However, for a slight additional cost, shock pads may be utilized that also provide lateral drainage to the perimeter drains (i.e., Brock Powerbase YSR™, FieldTurf Versatile™, or approved equivalent). Fields that utilize shock pads that also provide lateral drainage will not rely on the existing drainage system to drain the field. The existing system will become a redundant that will provide additional drainage.

Brock drainage panels are interlocking, roughly one-inch thick, expanded polypropylene panels that are perforated to allow vertical drainage. The bottom of a Brock Panel contains grooves that allow water to be transmitted to the storm drain system. Versatile drainage panels are interlocking, roughly half-inch thick, thermoplastic (composed of 50% recycled synthetic turf fields) panels that resemble thin “milk crates”. The Versatile panels allow significant vertical and lateral drainage. A schematic drainage panel base system is presented on Figure 3.

Due to the inherent high permeability of the drainage panels, field subgrade slopes may be reduced to 0.5%. To reduce erosion of the subgrade, a layer of a granular leveling course (i.e., Caltrans Class 2 Aggregate Baserock, existing “top-rock”, “bottom-rock”, etc.) is added, if needed, to the subgrade. A geotextile separation fabric (Mirafi 140N for Brock and Mirafi FW300 for Versatile) is often required to be placed on top of the leveling course. The separation fabric should not be placed over the subdrains to allow free flow of water into the subdrains. In addition to the drainage properties the panels act as a shock pad to reduce G-Max values. The advantage of a continuous drainage panel is a reduced section thickness (i.e., less excavation) and a softer field with a lower G-Max value.

As previously discussed, new infill standards are requiring new fields to include a shock pad to reduce G-Max values regardless of the drainage system utilized. We recommend utilizing a continuous drainage panel, such as Brock or Versatile, that will provide the required G-Max values to produce safe field with the additional drainage properties require to improve field performance. Additionally, the existing drainrock underlying the field will act as both the required leveling course and a redundant drainage system.

Perimeter Subdrains

The existing and proposed drainage panels rely on collected rainwater discharging into subdrains located at the perimeter of the field. These subdrains should be inspected prior to construction to assure they are in working order and are not topped with existing top rock. Additionally, the subdrain trenches may need to be increased in size to compensate for the increased flow rate associated with continuous drainage panels. To further increase the flow of water into the subdrains, the existing top rock should be removed in the areas overlying the existing subdrains and backfilled with compacted ¾-inch crushed drain rock.

Site Grading

We do not anticipate significant site grading will be required the proposed field improvements. The extent of site grading may include minor re-grading of the top of rock course and/or the removal of approximately one inch of existing drain rock. Site preparation and grading should conform to the following recommendations and criteria:

1. Surface Preparation – Clear all grass, brush, roots, over-sized debris, and organic material from areas to be graded. Excavate loose soil and loose rock to expose firm natural soils or bedrock. Organic material should be scraped from the surface, stockpiled for reuse in new landscaping or removed from the site. Any construction debris or abandoned utilities encountered during site grading should be removed from the site. Rocks larger than 4 inches (100 mm) encountered during subgrade preparation or site grading should be removed from the site.

2. Excavation – We judge that the surficial soils can be ripped and excavated with conventional equipment and the pool can be excavated with conventional equipment such as backhoes or small skid-steer loaders. Depending on the time of year that construction takes place, shallow groundwater may be encountered in excavations.

3. Materials – Non-expansive soil and rock mixtures generated from on-site excavations may be suitable for use as fill provided the maximum particle sizes are less than four inches and the soil has a maximum PI of 15. Processing will include removal and/or crushing of rock, mixing and moisture conditioning as described below.

4. Compacted Fill – On-site fill, backfill, and scarified subgrades should be conditioned above the optimum moisture content. Fill materials should be moisture conditioned to at least 2% above the optimum moisture content prior to compaction. Properly moisture conditioned fill materials should subsequently be placed in loose, horizontal lifts of 8 inches-thick or less and uniformly compacted to 90 percent relative compaction. Compacted surfaces should also be firm and unyielding under heavy rubber-tired equipment.

   Relative compaction refers to the ratio in percent of the in-situ dry density to the maximum laboratory density. The maximum dry density, and optimum moisture content of fill materials should be determined in accordance with ASTM Test Method D 1557, "Moisture-Density Relations of soils and Soil-Aggregate Mixtures Using a 10-lb. Rammer and 18-in. Drop."

5. Imported Select Fill – If imported fill is required, the material shall consist of soil and rock mixtures that shall be free of organic material, have a Liquid Limit less than 40 and a Plasticity Index less than 15, have a minimum R-Value of 20, be well-graded, and consist of at least 50% sand with 4-inch maximum particle sizes. Any imported fill material needs to be tested by the Geotechnical Engineer to determine its suitability for use as fill material.

6. Temporary Slopes – For temporary slopes, the Federal Occupational Safety and Health Administration (OSHA) has promulgated rules for Excavations, 29 CFR Part 1926, October 31, 1989. OSHA dictates allowable slope configurations and minimum shoring requirements based on categorized soil types. In conformance with OSHA's categorization, the onsite soil is "Type C". The Contractor may elect to use a variety of shoring and temporary slope configurations, but his operations must conform to Federal and State OSHA regulations. The safety of excavations, slopes, construction operations, and personnel are the sole responsibility of the Contractor.

Foundation Design

As previously discussed, new retaining walls will be constructed to replace existing failing retaining walls. Shallow foundations may be utilized to support the proposed retaining walls. Alternatively, drilled piers may be utilized if additional lateral support is needed Foundation design criteria are presented in Table A below.

TABLE A
FOUNDATION DESIGN CRITERIA
Redhill Community Park
San Anselmo, California

Shallow Spread Footings

Minimum footing width[1]:	12 inches
Minimum footing embedment depth into competent soil:	18 inches
Allowable bearing pressure (dead plus live loads)[2]:	2,000 psf
Base friction coefficient:	0.30
Lateral passive resistance[2, 3, 4]:	300 pcf

Drilled Piers

Minimum Diameter:	16 inches
Minimum Depth:	8 feet
Skin Friction:	350 psf
Lateral passive resistance[2, 3, 5]:	300 pcf

Notes:
1.) Size footing widths to avoid significantly different foundation pressures.
2.) May increase design values by 1/3 for total design loads including seismic.
3.) Equivalent Fluid Pressure, not to exceed 3,000 psf.
4.) Ignore uppermost 6-inches unless concrete or asphalt surfacing exists adjacent to foundation.
5.) Apply over two pier diameters.

Retaining Wall Design

We understand new retaining walls will be utilized to replace existing poorly performing walls. Additionally, we anticipate these walls will be free to rotate at the top, therefore, may be designed with “unrestrained” soil lateral earth pressures. Retaining walls should be designed utilizing the design criteria shown below on Table B.

TABLE B
RETAINING WALL DESIGN CRITERIA
Redhill Community Park
San Anselmo, California

Foundations	See Table A
Unrestrained Earth Pressure[1,2]	
Level Ground:	40 pcf
2:1 Slope:	60 pcf
Seismic Surcharge[3,4]	10 x H psf

Notes:
1.) Interpolate earth pressures for intermediate slopes.
2.) Equivalent fluid pressure.
3.) Not required for retaining walls less than 6 feet tall.
4.) Rectangular distribution. The factor of safety for short-term seismic conditions can be reduced to 1.1 or greater. "H" = wall height.

Drainage shall be provided for all retaining walls taller than 3 feet. Either ¾-inch crushed rock, wrapped within filter fabric or Caltrans Class 2 permeable material can be used. The seepage should be collected in a 4-inch perforated PVC drain line at the base of the wall. The permeable material shall extend at least 12 inches from the back of the wall and be continuous from the bottom of the wall to within 12 inches of the ground surface. Alternatively, drainage panels, such as Mirafi 100N, may be utilized. A schematic retaining wall drainage detail is presented on Figure 4.

Concrete Flatwork

Where exterior concrete slabs are used, we recommend they be at least five inches thick and reinforced with steel bars (not wire mesh). Additionally, contraction joints should be incorporated in the concrete slabs in both directions. The reinforcing bars should extend through the control joints. The Structural or Civil Engineer should provide the specific design details for concrete slab-on-grade.

Exterior concrete slabs should be underlain with 4-inches or more of Caltrans Class 2 Aggregate Base compacted to at least 92 percent relative compaction. Some movement should be expected for exterior concrete slabs that extend over cut-fill transition zones or where supported on expansive soil. If superior performance is desired, the exterior slabs can be thickened and/or be underlain with a thicker section of compacted aggregate baserock. The subgrade soil beneath concrete flatwork/patio areas should be scarified, moisture conditioned, and compacted to a minimum relative compaction of 90 percent prior to placing and compacting the baserock layer.

Asphalt Pavements

Asphalt pavement resurfacing may be needed. We expect that the parking lot will be subject to primarily lightweight passenger vehicles with occasional heavier vehicles. We recommend a minimum pavement section of 3-inches of asphalt concrete over at least 6-inches of aggregate baserock. If heavier loads are anticipated (such as for garbage trucks or frequent delivery trucks), or for “improved” performance, asphalt thickness could be increased to 4-inches with an at least 8-inch layer of baserock.

The aggregate base material should conform to Class 2 Aggregate Base in the current edition of Caltrans Standard Specifications. The aggregate base should be moisture conditioned to near optimum moisture content and compacted to at least 95 percent relative compaction in lifts no more than six inches thick.

Additional Services

We must review the design plans as they are nearing completion to confirm that the intent of our geotechnical recommendations has been incorporated in the plans. During construction, we must observe grading/fill placement (if any); synthetic turf subdrain reconstruction; synthetic turf subgrade preparation; concrete slab subgrade preparation; retaining wall back drains, retaining wall backfill compaction; and other geotechnical related work items. The purpose of our construction observation and testing services to verify the subsurface conditions are consistent with our investigation and confirm the work performed is in accordance with the project plans and our geotechnical recommendations.

We hope this provides you with the information you require at this time. Please do not hesitate to call with any questions or if we can be of further assistance.

Sincerely,
MILLER PACIFIC ENGINEERING GROUP

BENJAMIN S. PAPPAS
GE 2786
EXP. 09/30/22

Benjamin S. Pappas
Geotechnical Engineer No. 2786
(Expires 9/30/22)

Attachments: Figures 1 through 4
Appendix A

APPENDIX A

SUBSURFACE EXPLORATION AND LABORATORY TESTING

1.0 Subsurface Exploration

We explored subsurface conditions at the site by drilling 8 test borings on September 8 and September 15, 2004 at the locations shown on Figure 2. Test borings were drilled to a depth approximately 23.3 feet using a solid auger with a diameter of 6 inches.

The soils encountered were logged and identified by our Engineer in general accordance with ASTM Standard D 2487, "Field Identification and Description of Soils (Visual-Manual Procedure)." This standard is briefly explained on Figure A-1, Soil Classification Chart and Key to Log Symbols and Figure A-2, Rock Classification Chart. The boring logs are presented on Figures A-3 to A-12.

We obtained “undisturbed” samples using a 3-inch diameter, split-barrel California sampler with 2.5 by 6-inch brass tube liners. The 2-inch Standard Penetration Test (SPT) split-barrel sampler was intermittently used to aid in soil property indexing and identification. The samplers were driven with a 140-pound hammer falling 30 inches. The number of blows required to drive the samplers 18 inches was recorded and is reported on the boring logs as blows per foot for the last 12 inches of driving. The samples obtained were examined in the field, sealed to prevent moisture loss, and transported to our laboratory.

No groundwater was encountered during our exploration. However, near surface or perched water may be present during the winter or after periods of heavy rainfall. All borings were backfilled with soil cuttings.

2.0 Laboratory Testing

We conducted laboratory tests on selected intact samples to verify field identifications and to evaluate engineering properties. The following laboratory tests were conducted in accordance with the ASTM standard test method cited:

- Laboratory Determination of Water (Moisture Content) of Soil, Rock, and Soil-Aggregate Mixtures, ASTM D 2216;
- Density of Soil in Place by the Drive-Cylinder Method, ASTM D 2937;

- Unconfined Compressive Strength of Cohesive Soil, ASTM D 2166; and
- Resistance (R)-value/expansion pressure of untreated laboratory compacted soils/aggregates, D 2844.

The moisture content, dry density, and unconfined compression test results are shown on the exploratory Boring Logs, Figures A-3 through A-12. The R-value test result is shown on Figure A-13.

The exploratory boring logs, description of soils encountered and the laboratory test data reflect conditions only at the location of the boring at the time they were excavated or retrieved. Conditions may differ at other locations and may change with the passage of time due to a variety of causes including natural weathering, climate and changes in surface and subsurface drainage.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS		SYMBOL		DESCRIPTION
COARSE GRAINED SOILS over 50% sand and gravel	CLEAN GRAVEL	GW	▨	Well-graded gravels or gravel-sand mixtures, little or no fines
		GP	▨	Poorly-graded gravels or gravel-sand mixtures, little or no fines
	GRAVEL with fines	GM	▨	Silty gravels, gravel-sand-silt mixtures
		GC	▨	Clayey gravels, gravel-sand-clay mixtures
	CLEAN SAND	SW	▨	Well-graded sands or gravely sands, little or no fines
		SP	▨	Poorly-graded sands or gravely sands, little or no fines
	SAND with fines	SM	▨	Silty sands, sand-silt mixtures
		SC	▨	Clayey sands, sand-clay mixtures
FINE GRAINED SOILS over 50% silt and clay	SILT AND CLAY liquid limit <50%	ML	▥	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL	▨	Inorganic clays of low to medium plasticity, gravely clays, sandy clays, silty clays, lean clays
		OL	▥	Organic silts and organic silt-clays of low plasticity
	SILT AND CLAY liquid limit >50%	MH	▥	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts
		CH	▨	Inorganic clays of high plasticity, fat clays
		OH	▨	Organic clays of medium to high plasticity
HIGHLY ORGANIC SOILS		PT	▤	Peat, muck, and other highly organic soils
ROCK			▩	Undifferentiated as to type or composition

KEY TO BORING AND TEST PIT SYMBOLS

CLASSIFICATION TESTS	
AL	ATTERBERG LIMITS TEST
SA	SIEVE ANALYSIS
HYD	HYDROMETER ANALYSIS
P200	PERCENT PASSING NO. 200 SIEVE
P4	PERCENT PASSING NO. 4 SIEVE

STRENGTH TESTS	
TV	FIELD TORVANE (UNDRAINED SHEAR)
UC	LABORATORY UNCONFINED COMPRESSION
TXCU	CONSOLIDATED UNDRAINED TRIAXIAL
TXUU	UNCONSOLIDATED UNDRAINED TRIAXIAL
	UC, CU, UU = 1/2 Deviator Stress

SAMPLER TYPE

▮	UNDISTURBED CORE SAMPLE: MODIFIED CALIFORNIA OR HYDRAULIC PISTON SAMPLE
▯	STANDARD PENETRATION TEST SAMPLE
X	DISTURBED OR BULK SAMPLE
☒	ROCK OR CORE SAMPLE

NOTE: Test boring and test pit logs are an interpretation of conditions encountered at the location and time of exploration. Subsurface rock, soil and water conditions may differ in locations and with the passage of time. Lines defining interface between differing soil or rock description are approximate and may indicate a gradual transition.

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FILE: Soil Class.dwg

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SOIL CLASSIFICATION CHART
Red Hill Park Improvements
San Anselmo, California

A-1
Figure

Project No.	Date	Approved By:
737.03	9/22/04	

FRACTURING AND BEDDING

Fracture Classification	Spacing	Bedding Classification
Crushed	less than 3/4 inch	Laminated
Intensely fractured	3/4 to 2-1/2 inches	Very thinly bedded
Closely fractured	2-1/2 to 8 inches	Thinly bedded
Moderately fractured	8 to 24 inches	Medium bedded
Widely fractured	2 to 6 feet	Thickly bedded
Very widely fractured	greater than 6 feet	Very thickly bedded

HARDNESS

Low	Carved or gouged with a knife
Moderate	Easily scratched with a knife, friable
Hard	Difficult to scratch, knife scratch leaves dust trace
Very hard	Rock scratches metal

STRENGTH

Friable	Crumbles by rubbing with fingers
Weak	Crumbles under light hammer blows
Moderate	Indentations <1/8 inch with moderate blow with pick end of rock hammer
Strong	Withstands few heavy hammer blows, yields large fragments
Very strong	Withstands many heavy hammer blows, yields dust, small fragments

WEATHERING

Complete	Minerals decomposed to soil, but fabric and structure preserved
High	Rock decomposition, thorough discoloration, all fractures are extensively coated with clay, oxides or carbonates
Moderate	Fracture surfaces coated with weathering minerals, moderate or localized discoloration
Slight	A few stained fractures, slight discoloration, no mineral decomposition, no affect on cementation
Fresh	Rock unaffected by weathering, no change with depth, rings under hammer impact

NOTE: Test boring and test pit logs are an interpretation of conditions encountered at the location and time of exploration. Subsurface rock, soil and water conditions may differ in other locations and with the passage of time.

FILE: Rock Class.dwg

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ROCK CLASSIFICATION CHART
Red Hill Park Improvements
San Anselmo, California

A-2

Project No. 737.03 Date 9/21/04 Approved By: JAM Figure

BORING 1

EQUIPMENT: AT-300 Track Mounted Drill Rig, with 6" Solid Stem Auger

DATE: 9/8/04

ELEVATION: 76-Feet*

*REFERENCE: Site Plan, Figure 2

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters	DEPTH feet	SAMPLE	SYMBOL (3)	
					0	0		▨	**SANDY CLAY WITH SILT (CL) (FILL)** brown and dark brown mottled, low plasticity, medium stiff to stiff, moist, with 30-40 % fine sand, 40-50% clay, and 10-15% silt
					1			▩	**SILTY SAND (SM) (FILL)** red-orange, dense, dry to moist, with 70-80 % fine sand, 20-30% silt, and occasional fine subrounded gravel
		28	13.1	109		5	■		
					2				Bottom of boring at 5.7' No groundwater encountered during drilling
					3	10			
					4				
						15			
					5				
					6	20			

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

FILE: borings.dwg

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BORING LOG
Red Hill Park Improvements
San Anselmo, California

A-3

Project No. 737.03 Date 9/21/04 Approved By: Am

Figure

BORING 2

EQUIPMENT: AT-300 Track Mounted Drill Rig, with 6" Solid Stem Auger

DATE: 9/8/04
ELEVATION: 81-Feet*
*REFERENCE: Site Plan, Figure 2

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters	DEPTH feet	SAMPLE	SYMBOL (3)	
					0	0		▒	SILTY SAND WITH GRAVEL (SM) (FILL) brown, dry to moist, medium dense, with 70-80 % fine sand, 15-20% silt, and less than 5% subrounded gravel
					1			▒	GRAVELLY CLAYEY SAND (SC) (FILL) dark brown, medium dense, moist, with 50-60 % fine to medium grained sand, approx. 30 % low plasticity clay, and 10% fine subangular to subrounded fine gravel
		25	9.9	124		5	■	▒	
					2			▒	
								▨	SANDY CLAY (CH) brown, medium stiff, medium to high plasticity, moist, with approx. 70 % clay, 25% fine to coarse sand, and less than 5% subangular to subrounded fine gravel
					3	10		▨	
		17	16.6	113			■	▨	
					4			▨	
								▨	SANDY CLAY (CL) brown with red and yellow mottling, stiff, medium plasticity
		23	17.5	112		15	■	▨	
									Bottom of boring at 16.0' No groundwater encountered during drilling
					5				
					6	20			

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m³ = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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BORING LOG
Red Hill Park Improvements
San Anselmo, California

A-4

Project No. 737.03 Date 9/21/04 Approved By:

Figure

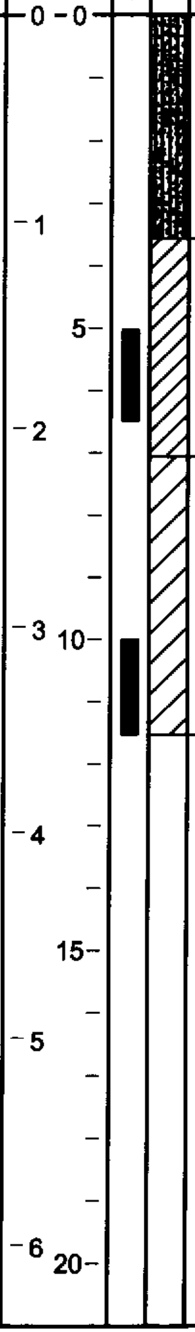
BORING 3

EQUIPMENT: AT-300 Track Mounted Drill Rig, with 6" Solid Stem Auger

DATE: 9/8/04

ELEVATION: 79-Feet*

*REFERENCE: Site Plan, Figure 2



OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	
					SILTY SAND (SM) (FILL) red-orange, dry to moist, medium dense, with approx. 80% fine sand, and 20% silt
		26	18.9	106	SANDY CLAY (CL) brownish black, stiff, moist, low plasticity, with 70-80% clay, 20-30% fine sand, and less than 5% subangular fine gravel
					SANDY CLAY (CH) red-brown, soft, high plasticity, moist, with approx. 90% clay, and 10% fine sand
		9	19.2	109	grades to moist to wet, medium stiff, with less than 5% fine gravel
					Bottom of boring at 11.5' No groundwater encountered during drilling

NOTES:
(1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3= 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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BORING LOG
Red Hill Park Improvements
San Anselmo, California

A-5

Project No. 737.03
Date 9/21/04
Approved By: JAM

Figure

BORING 4

EQUIPMENT: AT-300 Track Mounted Drill Rig, with 6" Solid Stem Auger

DATE: 9/8/04
ELEVATION: 83-Feet*
*REFERENCE: Site Plan, Figure 2

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters / feet	SAMPLE	SYMBOL (3)	
					0 – 0			CLAYEY SAND (SC) (FILL) blue-grey, dry, medium dense with 80-85 % fine sand, and 15-20% medium to high plasticity clay
					1			SILTY SAND (SM) (FILL) red-brown, moist, medium dense with approx. 80% fine sand, and 20% silt
	900	13	14.7	116	5 2	■		SANDY CLAY (CH) brown, medium stiff, high plasticity, moist, with approx. 75% clay, 20% medium to fine sand, and less than 5% subangular fine gravel
		25	20.5	106	3 10	■		orange (Fe oxide) mottling encountered, medium stiff
								Bottom of boring at 11.5' No groundwater encountered during drilling
					4			
					15			
					5			
					6 20			

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m³ = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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BORING LOG
Red Hill Park Improvements
San Anselmo, California

A-6

Project No. 737.03
Date 9/21/04
Approved By: IMM

Figure

BORING 5

EQUIPMENT: Mobile B-53
with 6" Hollow Stem Auger

DATE: 9/15/04
ELEVATION: 91-Feet*
*REFERENCE: Site Plan, Figure 2

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters	DEPTH feet	SAMPLE	SYMBOL (3)	
					0	0			**GRAVELLY SILTY SAND (SM) (FILL)** brown, dry, loose to medium dense, with 15-20 % subangular fine to 3/4" gravel
									SANDY SILT (ML) (FILL) light brown, dry, medium dense, approx. 90% silt, and 10% fine sand
					1				
						5	■		
		45	12.7	109	2		■		
					3	10	■		**CLAYEY SILT (ML)** grey, dense, with 20-30% clay, with fractured rock fragments
	3200	25	17.7	111			■		
					4				
						15	■		
		30	10.2	127	5		■		
									FRANCISCAN MELANGE BEDROCK (fm) black, intensely fractured, friable, weak some orange Fe oxide mottling in fractures (continued)
		35			6	20	■		

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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ENGINEERING GROUP

BORING LOG
Red Hill Park Improvements
San Anselmo, California

A-7

Project No. 737.03 Date 9/21/04 Approved By: JAM Figure

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters	DEPTH feet	SAMPLE	SYMBOL (3)	BORING 5 (CONTINUED)
						20	■	▨	FRANCISCAN MELANGE BEDROCK (fm) black, intensely fractured, friable, weak some orange Fe oxide mottling in fractures
		50/3"	6.0		7		⧄	▨	
									Bottom of boring at 23.3' No groundwater encountered during drilling
						25			
					8				
					9				
						30			
					10				
						35			
					11				
					12				
						40			

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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San Anselmo, California

A-8

Project No. 737.03 Date 9/21/04 Approved By:

Figure

BORING 6

EQUIPMENT: Mobile B-53
with 6" Hollow Stem Auger

DATE: 9/15/04
ELEVATION: 100-Feet*
*REFERENCE: Site Plan, Figure 2

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters	DEPTH feet	SAMPLE	DESCRIPTION
					0	0		**GRAVELLY CLAYEY SAND (SC) (FILL)** brown, dry, approx. 65% fine sand, 30% medium to high plasticity clay, 5-10% subrounded fine gravel
					1			
								GRAVELLY SANDY SILT (ML) (FILL) brown, dry, with approx. 70% silt, 25% fine sand, and less than 5% fine gravel
						5	■	
		43	9.0	122	2		■	
					3	10	■	**GRAVELLY SANDY CLAY (CL)** brown, moist, low plasticity, medium stiff, with approx. 60% clay, 25-30% medium to fine sand, 10% subangular to subrounded fine gravel
	2400	15	13.9	118			■	
					4			
								GRAVELLY CLAYEY SAND (SC) red-orange, moist, medium dense, with approx. 65% fine sand, 25-30% low plasticity clay, 5-10% subangular fine gravel sized rock fragments
						15	■	
		21	16.1	114	5		■	
					6	20	■	

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m³ = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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BORING LOG
Red Hill Park Improvements
San Anselmo, California

A-9

Project No. 737.03
Date 9/21/04
Approved By: JAM

Figure

BORING 6
(CONTINUED)

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters feet	SAMPLE	SYMBOL (3)	
	2400	34	17.7	111	20	■	▨	GRAVELLY SANDY SILTY CLAY (CL) orange, moist, medium to low plasticity, stiff to very stiff, with approx. 55-60 % clay, 20-25% fine gravel sized rock fragments, 20 % fine sand
					7 25 8 9 30 10 35 11 12 40			Bottom of boring at 21.5' No groundwater encountered during drilling

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m³= 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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BORING LOG
Red Hill Park Improvements
San Anselmo, California

A-10

Project No. 737.03 Date 9/21/04 Approved By: /MM

Figure

BORING 7

EQUIPMENT: Mobile B-53
with 6" Hollow Stem Auger

DATE: 9/15/04
ELEVATION: 76-Feet*
*REFERENCE: Site Plan, Figure 2

OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters feet	SAMPLE	SYMBOL (3)	
					0 – 0		▓	2" ASPHALT CONCRETE 6" AGGREGATE BASEROCK
					– 1		▥	SANDY SILT (ML) (FILL) brown, dry, loose, with approx. 80 % silt, 20% fine sand
		14	27.6	91	5 – 2 – 3 10	■	▨	SILTY CLAY (CH) black with blue-green mottling, moist, medium stiff, medium to high plasticity
		18	12.7	117	– 4	■	▒	CLAYEY SAND (SC) brown and green mottled, moist, medium dense, with approx. 60-65% fine to medium sand, 20 % low plasticity clay, and 15-20% medium gravel sized rock fragments
		7	22.4	102	15 – 5	■	▨	SANDY CLAY (CH) red-brown, moist, soft, high plasticity, with approx. 80% clay, 10-15% fine to medium rounded sand, and less than 5 % fine gravel
					– 6 20			Bottom of boring at 17.5' No groundwater encountered during drilling

NOTES:
(1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3= 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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BORING LOG
Red Hill Park Improvements
San Anselmo, California

A-11

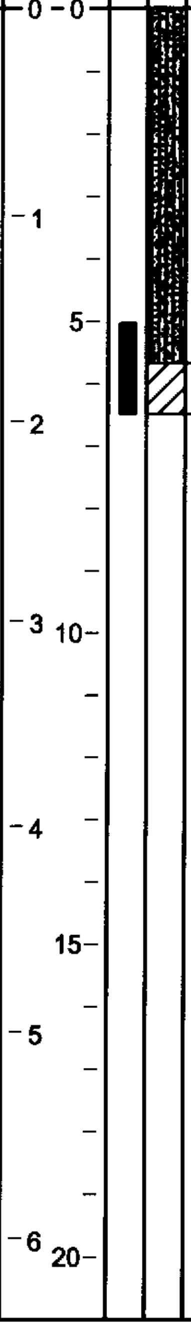
Project No. 737.03
Date 9/21/04
Approved By: JAM

Figure

BORING 8

EQUIPMENT: Mobile B-53
with 6" Hollow Stem Auger

DATE: 9/15/04
ELEVATION: 75-Feet*
*REFERENCE: Site Plan, Figure 2



OTHER TEST DATA	UNDRAINED SHEAR STRENGTH psf (1)	BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT pcf (2)	DEPTH meters feet	SAMPLE	SYMBOL (3)	
								GRAVELLY SILTY SAND (SM) (FILL) light brown, dry, loose, with approx. 60 % fine sand, 30% silt, and 10% gravel
		25	15.1	114				SANDY CLAY (CL) dark brown, yellow and orange mottled, moist, medium stiff, medium plasticity, with approx. 60 % clay, 30% fine to coarse sand, and 10% fine to medium gravel
								Bottom of boring at 6.5' No groundwater encountered during drilling

NOTES: (1) METRIC EQUIVALENT STRENGTH (kPa) = 0.0479 x STRENGTH (psf)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT kN/m^3 = 0.1571 x DRY UNIT WEIGHT (pcf)
(3) GRAPHIC SYMBOLS ARE ILLUSTRATIVE ONLY

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BORING LOG
Red Hill Park Improvements
San Anselmo, California

A-12

Project No. 737.03 Date 9/21/04 Approved By: JAM

Figure

COOPER

R-value Test Report (Caltrans 301)

Job No.:	081-200	**Date:**	09/20/04
Client:	Miller Pacific Engineering Group	**Tested**	MD
Project:	737.03	**Reduced**	MJ
Sample	Bulk B1, 0-1.5'	**Checked**	DC
Soil Type:	Reddish Brown Silty SAND with Gravel		

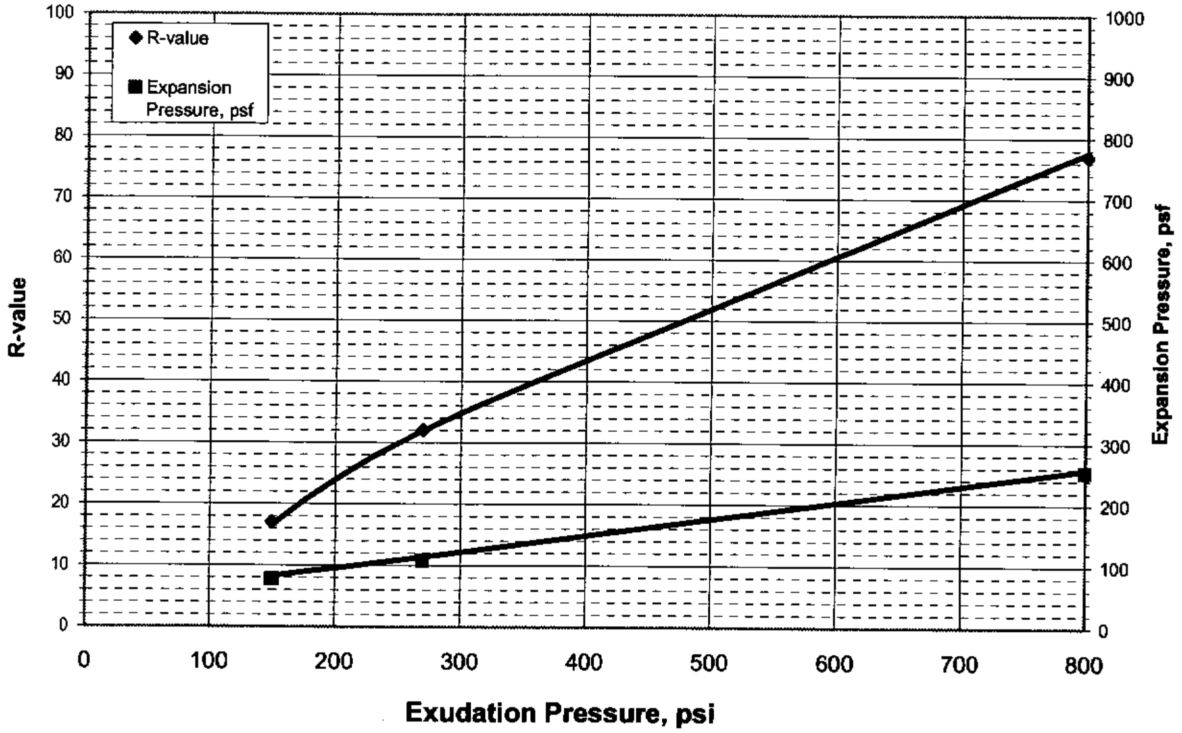
Initial Moisture, 7.5%

R-value 35

Expansion Pressure 120 psf

Remarks:

Specimen Number	A	B	C	D
Exudation Pressure, psi	270	800	150	
Prepared Weight, grams	1200	1200	1200	
Final Water Added, grams/cc	40	20	60	
Weight of Soil & Mold, grams	3310	3221	3257	
Weight of Mold, grams	2096	2089	2100	
Height After Compaction, in.	2.64	2.44	2.58	
Moisture Content, %	11.1	9.3	12.9	
Dry Density, pcf	125.3	128.5	120.3	
Expansion Pressure, psf	107.5	253.7	77.4	
Stabilometer @ 1000				
Stabilometer @ 2000	101	26	120	
Turns Displacement	3.37	3.61	3.96	
R-value	32	77	17	



FILE: borings.dwg

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ENGINEERING GROUP

R VALUE TEST
Red Hill Park Improvements
San Anselmo, California

A-13

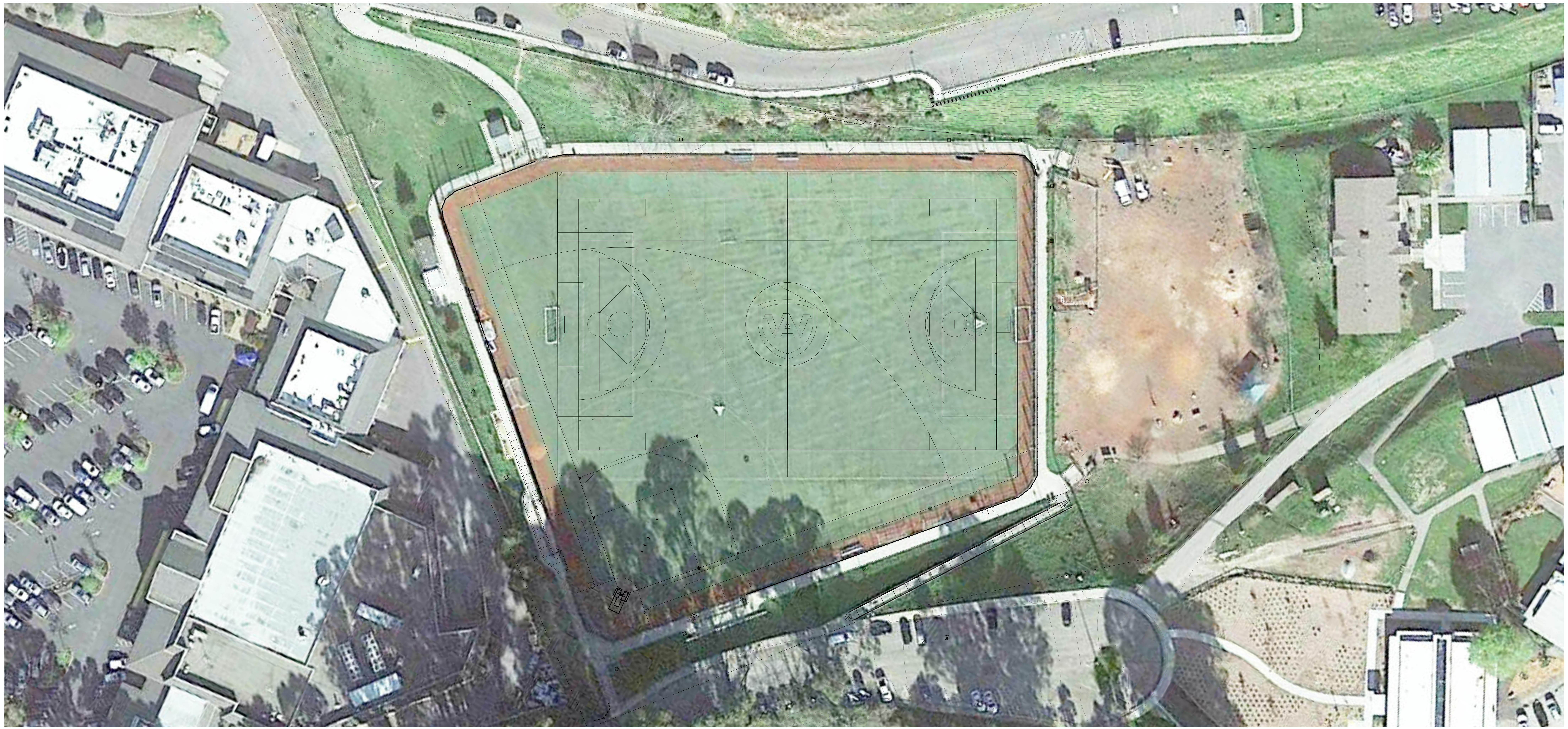
Project No. 737.03 Date 10/1/04 Approved By:

Figure

RED HILL COMMUNITY SPORTS PARK RENOVATION

100 SHAW DRIVE, SAN ANSELMO, CALIFORNIA 94960

DSA SUBMITTAL
FEBRUARY 17, 2023



PROJECT TEAM

OWNER

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SENIOR DIRECTOR OF
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SANTA ROSA, CA 95404

CHRIS WARNER
STRUCTURAL ENGINEER OF RECORD,
DESIGN PROFESSIONAL
IN RESPONSIBLE CHARGE
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NOVATO, CA 94947

BEN PAPPAS
PHONE: (707) 765-6140
EMAIL: BPappas@millerpac.com

Peter Stanley 2/17/2023 4:49 PM

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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-120489 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 3/20/2022

ARCHITECT/ ENGINEER
ZFA STRUCTURAL ENGINEERS

1212 fourth street | suite z
santa rosa ca 95404
zfa job no. 20400
zfa.com
707.526.0992

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CHRIS S. WARNER
No. S4613

DESIGN TEAM

CARDUCCI ASSOCIATES

555 BEACH STREET FOURTH FLOOR
SAN FRANCISCO, CA 94133
www.carducciassociates.com

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STAMP

WILLIAM E. FEE
2537
Bill Fee
Signature
12.31.2024
Renewal Date
02.17.2023
Date

OWNER

TAMALPAIS UNION HIGH SCHOOL DISTRICT

PROJECT

RED HILL COMMUNITY SPORTS PARK RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

DSA SUBMITTAL

FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE: 02.17.2023
SCALE: AS SHOWN
PROJECT NO: TAM22-01

SHEET TITILE

COVER

SHEET NUMBER

G00.00

STATEMENT OF GENERAL CONFORMANCE

FOR ARCHITECTS/ENGINEERS WHO UTILIZE PLANS, INCLUDING BUT NOT LIMITED TO SHOP DRAWINGS, PREPARED BY OTHER LICENSED DESIGN PROFESSIONALS AND/OR CONSULTANTS

FILE NO. : 21-H2

☒ SHEET G00.04 AND THE LANDSCAPE, AND CIVIL DRAWINGS OR SHEETS LISTED ON THE COVER OR INDEX SHEET

THE DRAWING, PAGE OF SPECIFICATIONS/CALCULATIONS

☐

HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS OR CONSULTANTS WHO ARE LICENSED AND/OR AUTHORIZED TO PREPARE SUCH DRAWINGS IN THIS STATE. IT HAS BEEN EXAMINED BY ME FOR:

1. DESIGN INTENT AND APPEARS TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS PREPARED BY ME AND
2. COORDINATION WITH MY PLANS AND SPECIFICATION AND IS ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT.

THE STATEMENT OF GENERAL CONFORMANCE "SHALL NOT BE CONSTRUED AS RELIEVING ME OF MY RIGHTS, DUTIES, AND RESPONSIBILITIES UNDER SECTIONS 17302 AND 81138 OF THE EDUCATION CODE AND SECTIONS 4-336, 4-341 AND 4-344 OF TITLE 24, PART 1. (TITLE 24, PART 1, SECTION 4-317 [B])

I FIND THAT:

☒ SHEET G00.04 AND ALL LANDSCAPE, AND CIVIL DRAWINGS OR SHEETS LISTED ON THE
☐ COVER OR INDEX SHEET
THIS DRAWING OR PAGE

☒ IS / ARE IN GENERAL CONFORMANCE WITH THE PROJECT DESIGN INTENT, AND
☒ HAS / HAVE BEEN COORDINATED WITH THE PROJECT PLANS AND SPECIFICATIONS

SIGNATURE:
DATE: 02.17.2023

ARCHITECT OR ENGINEER DESIGNATED TO BE IN GENERAL RESPONSIBLE CHARGE

PRINT NAME: CHRIS WARNER

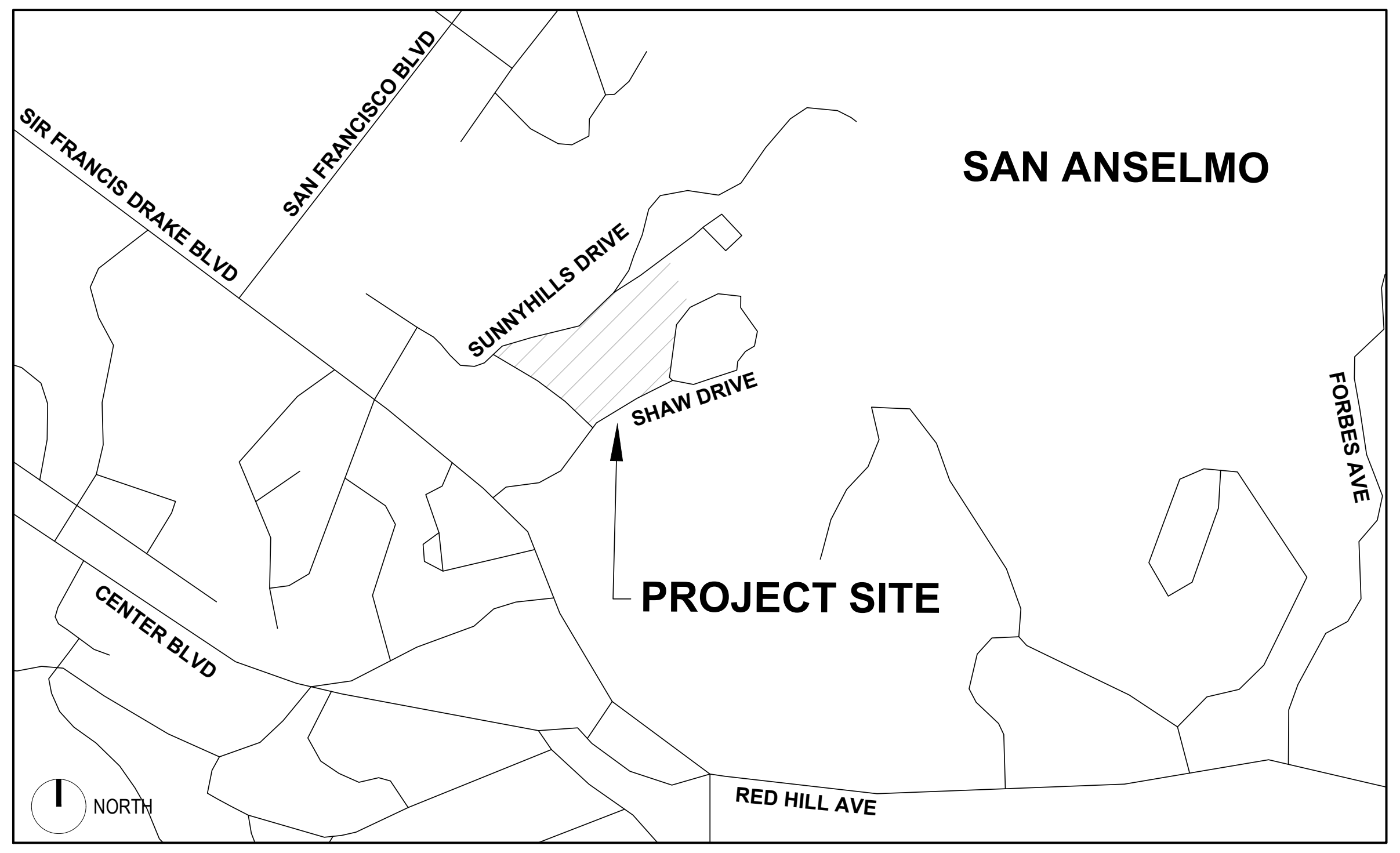
LICENSE NUMBER: S4613
EXPIRATION DATE: 12.31.2023

STRUCTURAL ENGINEER: DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE

ZFA ENGINEERS
1212 FOURTH STREET, SUITE Z
SANTA ROSA, CA 95404
PHONE: 707-526-0992
EMAIL: CHRISW@ZFA.COM

DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE STATEMENT	
THESE DRAWINGS FOR THE ITEMS LISTED BELOW HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS LICENSED IN THIS STATE. THESE DOCUMENTS HAVE BEEN EXAMINED BY ME, AND COORDINATED FOR DESIGN INTENT AND HAVE BEEN FOUND TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS AND ARE ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT FOR WHICH I AM THE INDIVIDUAL DESIGNATED TO BE IN GENERAL RESPONSIBLE CHARGE:	
1. ACCESSIBLE ROUTE/RAMP/PARKING, SPORT FIELD RESURFACING AND ASSOCIATED APPURTENANCES.	BILL FEE, CARDUCCI ASSOCIATES
2. CIVIL ENGINEERING	CRAIG OVERBO, BOHLEY CONSULTING, INC

VICINITY MAP



SCOPE OF WORK

SITE IMPROVEMENTS CONSISTING OF: ACCESSIBLE ROUTE/RAMP/RETAINING WALL, SPORTS FIELD RESURFACING AND ASSOCIATED APPURTENANCES. SPORTS FIELD RESURFACING WILL BE VIA CMAS CONTRACT.

PROJECT SCHEDULING

MARCH 10 TO JUNE 29, 2023: MATERIAL PROCUREMENT.
JUNE 2, 2023: CLOSE THE SITE.
JUNE 5; 2023: MOBILIZE ON SITE.
AUGUST 4, 2023: COMPLETE CONSTRUCTION
AUGUST 7, 2023: OPEN THE SITE
AUGUST 8 TO SEPTEMBER 18, 2023: CLOSE OUT

APPLICABLE CODES

APPLICABLE CODES

CONSTRUCTION SHALL CONFORM TO THE FOLLOWING MODEL CODES:
2022 CALIFORNIA ADMINISTRATIVE CODE (CAC), PART 1, TITLE 24 CCR
2019 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 CCR
(2018 INTERNATIONAL BUILDING CODE, VOL. 1& 2, AND 2019 CALIFORNIA AMENDMENTS)
2019 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE CCR
(2017 NATIONAL ELECTRICAL CODE AND 2019 CALIFORNIA AMENDMENTS)
2019 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE CCR
(2018 IAPMO UNIFORM PLUMBING CODE AND 2019 CALIFORNIA AMENDMENTS)
2019 CALIFORNIA FIRE CODE (CFC) PART 9, TITLE 24 CCR
(2018 INTERNATIONAL FIRE CODE AND 2019 CALIFORNIA AMENDMENTS)
2019 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), PART 11, TITLE 24 CCR
2019 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24 CCR
TITLE 19, CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS
2019 CALIFORNIA CODE OF REGULATIONS, TITLE 24
2015 CALIFORNIA CODE OF REGULATIONS, TITLE 23 MODEL WATER EFFICIENT LANDSCAPE ORDINANCE

GOVERNING AGENCY
DIVISION OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
REGION 1 OFFICE
1515 CLAY STREET, SUITE 1201
OAKLAND, CA 94612
PH: (510) 622-3140
FAX: (510) 622-3101

1. THIS PROJECT IS A DSA PROJECT AND AS A RESULT AN INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE DIVISION OF STATE ARCHITECT SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4 - 342, PART 1, TITLE 24, CCR.

GENERAL NOTES

1. DAMAGE TO AREAS OUTSIDE OF LIMIT OF WORK CAUSED BY WORK UNDER THIS CONTRACT SHALL BE REPAIRED BY CONTRACTOR AT NO ADDITIONAL COST.
2. UTILITIES: ALL UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE FOR INFORMATION ONLY. NO REPRESENTATION IS MADE AS TO THE ACCURACY OR COMPLETENESS OF SAID INFORMATION. NOTIFY CONSTRUCTION MANAGER OF ANY FOUND DISCREPANCIES.
3. CARDUCCI & ASSOCIATES IS NOT RESPONSIBLE FOR THE EXACT LOCATION OF UTILITY LINES SHOWN HEREON; NOR FOR ANY DAMAGES BY ANY CONSTRUCTION OR EXCAVATION ON OR NEAR SAID UTILITIES.
4. CALL UNDERGROUND SERVICE ALERT 811, A MINIMUM OF 48 HOURS BEFORE ANY CONSTRUCTION OR EXCAVATION IN THIS AREA.
5. PRIOR TO COMMENCING WORK, CONTRACTOR MUST FIELD LOCATE ALL EXISTING UTILITIES INCLUDING: TYPE OF UTILITY AND FACILITY THAT IT SERVICES, SIZE, LOCATION, AND DEPTH. NOTIFY DISTRICT 72 HOURS BEFORE CONSTRUCTION, EXCAVATION AND ANY UTILITIES SHUT DOWN.
6. A COPY OF TITLE 24 PARTS 1-5 SHALL BE KEPT ON THE JOB SITE AT ALL TIMES
7. IN ACCORDANCE WITH TITLE 24, PART 1 CHAPTER 4: THE ADMINISTRATIVE REGULATIONS FOR THE DIVISION OF STATE ARCHITECT STRUCTURAL SAFETY (DSA/SS)
    - ALL CONSTRUCTION CHANGE DOCUMENTS AND ADDENDA SHALL BE SIGNED BY THE ARCHITECT AND THE DISTRICT AND APPROVED BY DSA. CONSTRUCTION CHANGE DOCUMENTS NOT VALID UNTIL APPROVED BY DSA (4-338).
    - ALL TESTS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 4-335 AND APPROVED T & I SHEET.
    - TESTS OF MATERIALS AND TESTING LAB SHALL BE IN ACCORDANCE WITH SECTION 4-335 AND THE DISTRICT SHALL EMPLOY AND PAY THE LAB. COSTS OF RE-TESTS SHALL BE BACK-CHARGED TO THE CONTRACTOR.
    - DSA SHALL BE NOTIFIED AT THE START OF CONSTRUCTION AND PRIOR TO PLACEMENT OF CONCRETE (4-331)
    - INSPECTOR SHALL BE APPROVED BY DSA AND EMPLOYED DIRECTLY BY THE DISTRICT. INSPECTION SHALL BE IN ACCORDANCE WITH SECTION 4-333(B). THE DUTY OF THE INSPECTOR SHALL BE IN ACCORDANCE WITH WITH SECTION 4-342.
    - SUPERVISION OF CONSTRUCTION BY DSA SHALL BE IN ACCORDANCE WITH SECTION 4-334.
    - VERIFIED REPORTS SHALL BE SUBMITTED BY CONTRACTORS. INSPECTORS (DSA-6) AND ARCHITECTS AND ENGINEERS (DSA-6AE) IN ACCORDANCE WITH SECTIONS 4-336 AND 4-353.
    - THE ARCHITECT SHALL PERFORM THEIR DUTIES IN ACCORDANCE WITH SECTIONS 4-333(A) AND 4-341.
    - THE CONTRACTOR SHALL PERFORM THEIR DUTIES IN ACCORDANCE WITH SECTION 4-343.
8. THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF ALTERATION, REHABILITATION, OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, C.C.R. SHOULD ANY EXISTING CONDITIONS BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH SAID TITLE 24 C.C.R., A CONSTRUCTION CHANGE DOCUMENTS DETAILING AND SPECIFYING THE REQUIRED REPAIR WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE REPAIR WORK. (SECTION 4-317C, PART 1, TITLE 24).
9. DSA IS NOT SUBJECT TO ARBITRATION.
10. WORK SHALL COMPLY WITH THE PROVISIONS OF CHAPTER 33 OF THE CBC & CFC, "FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION".

CONSTRUCTION ACCESS AND COORDINATION NOTES

1. SECURE SITE WITH CONSTRUCTION FENCE AS REQUIRED. CONTRACTOR SHALL REPAIR AND REPLACE ANY BROKEN OR DAMAGED CONSTRUCTION FENCE.
2. COORDINATE WORK WITH DISTRICT, CONSTRUCTION MANAGER, AND OTHER WORK ON SITE.
3. CONTRACTOR TO REPLACE ANY BROKEN OR CRACKED PAVING CAUSED BY THE ACTIVITIES RELATED TO THE FIELD REFURBISHMENT PROJECT. CONTRACTOR IS ALSO RESPONSIBLE FOR PROTECTING THE EXISTING CONDITIONS AND EXISTING UTILITIES THAT ARE REMAINING.

DSA NOTES

1. NO CHANGES OR REVISIONS SHALL BE MADE FOLLOWING WRITTEN APPROVAL WHICH AFFECT ACCESS COMPLIANCE ITEMS, UNLESS SUCH CHANGES OR REVISIONS ARE SUBMITTED TO THE DSA FOR APPROVAL.
2. SUBSTITUTIONS AFFECTING DSA REGULATED ITEMS SHALL BE SUBMITTED AS A CONSTRUCTION CHANGE DOCUMENT OR ADDENDA AND SHALL BE APPROVED BY DSA PRIOR TO FABRICATION AND INSTALLATION
3. CONSTRUCTION CHANGE DOCUMENTS MUST BE SIGNED BY THE FOLLOWING:
    - 3.1. ARCHITECT OR ENGINEER OF RECORD
    - 3.2. STRUCTURAL ENGINEER (WHEN APPLICABLE)
    - 3.3. DELEGATED PROFESSIONAL ENGINEER
    - 3.4. DSA
4. MATERIALS AND THEIR INSTALLATION SHALL COMPLY WITH APPLICABLE CODES, STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.

LANDSCAPE SHEET LIST

SHEET SEQUENCE	SHEET NUMBER	SHEET TITLE
1	G00.00	COVER
2	G00.01	SHEET INDEX AND GENERAL NOTES
3	G00.02	FIRE AND LIFE SAFETY NOTES
4	G00.03	SITE PLAN
5	G00.04	SCOPE OF WORK
6	L01.00	DEMO LEGEND
7	L01.01	DEMO PLAN
8	L02.00	MATERIALS LEGEND & PLAN
9	L03.00	DETAILS - CONCRETE
10	L03.01	DETAILS - BULKHEAD AND DRAINAGE
11	L03.02	DETAILS - SYNTHETIC TURF AND BASES
12	L03.03	DETAILS - RETAINING WALL AND RAILING
13	L03.04	DETAILS - SITE ENLARGEMENTS
14	L03.05	DETAILS - SIGNAGE
15	L03.06	DETAILS - FENCING AND GATES
16	L03.07	DETAILS - EXISTING CONDITIONS
17	L03.08	DETAILS - EXISTING RESTROOM
18	L03.09	SYNTHETIC TURF

CIVIL SHEET LIST

19	C0.01	GENERAL NOTES
20	C1.01	GRADING PLAN
21	C1.02	GRADING PLAN
22	C2.01	EROSION CONTROL PLAN
23	C2.02	EROSION CONTROL DETAILS

STRUCTURAL SHEET LIST

24	S0.1	GENERAL NOTES
25	S1.1	TYPICAL CONCRETE DETAILS
26	S2.1	FOUNDATION PLAN
27	S4.1	FOUNDATION DETAILS

27		TOTAL NUMBER OF SHEETS

ABBREVIATIONS

@	AT
AC	ASPHALT CONCRETE
ADA	AMERICANS WITH DISABILITIES ACT
ADJ	ADJACENT
BJB	BURIED JUNCTION BOX
CL	CENTER LINE
CLR	CLEAR
COM	COMMUNICATIONS BOX
CONC.	CONCRETE
DI	DRAIN INLET
DSA	DIVISION OF STATE ARCHITECT
(E)	EXISTING
EP	EXISTING PAVING
EQ	EQUAL
EXIST	EXISTING
FG	FINISH GRADE
HP	HIGH POINT
INV	INVERT
LOW	LIMIT OF WORK
MAX	MAXIMUM
MH	MAN HOLE
ML	MAIN LINE (IRRIGATION)
PB	PULL BOX
PD	PERIMETER DRAIN
PP	PERF PIPE
POT	PATH OF TRAVEL
QCV	QUICK COUPLER VALVE
RC	RELATIVE COMPACTION
RIM	RIM ELEVATION
SD	STORM DRAIN
SDMH	STORM DRAIN MAN HOLE
ST	SYNTHETIC TURF (FINISH GRADE)
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
TCB	TRACK CHANNEL DRAIN CATCH BASIN
TP	TOP OF PAVING
TPZ	TREE PROTECTION ZONE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
UON	UNLESS OTHERWISE NOTED
VIF	VERIFY IN FIELD
W/	WITH

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Signature
12.31.2024
Renewal Date
02.17.2023
Date

OWNER
TAMALPAIS UNION HIGH SCHOOL DISTRICT

PROJECT
RED HILL COMMUNITY SPORTS PARK RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

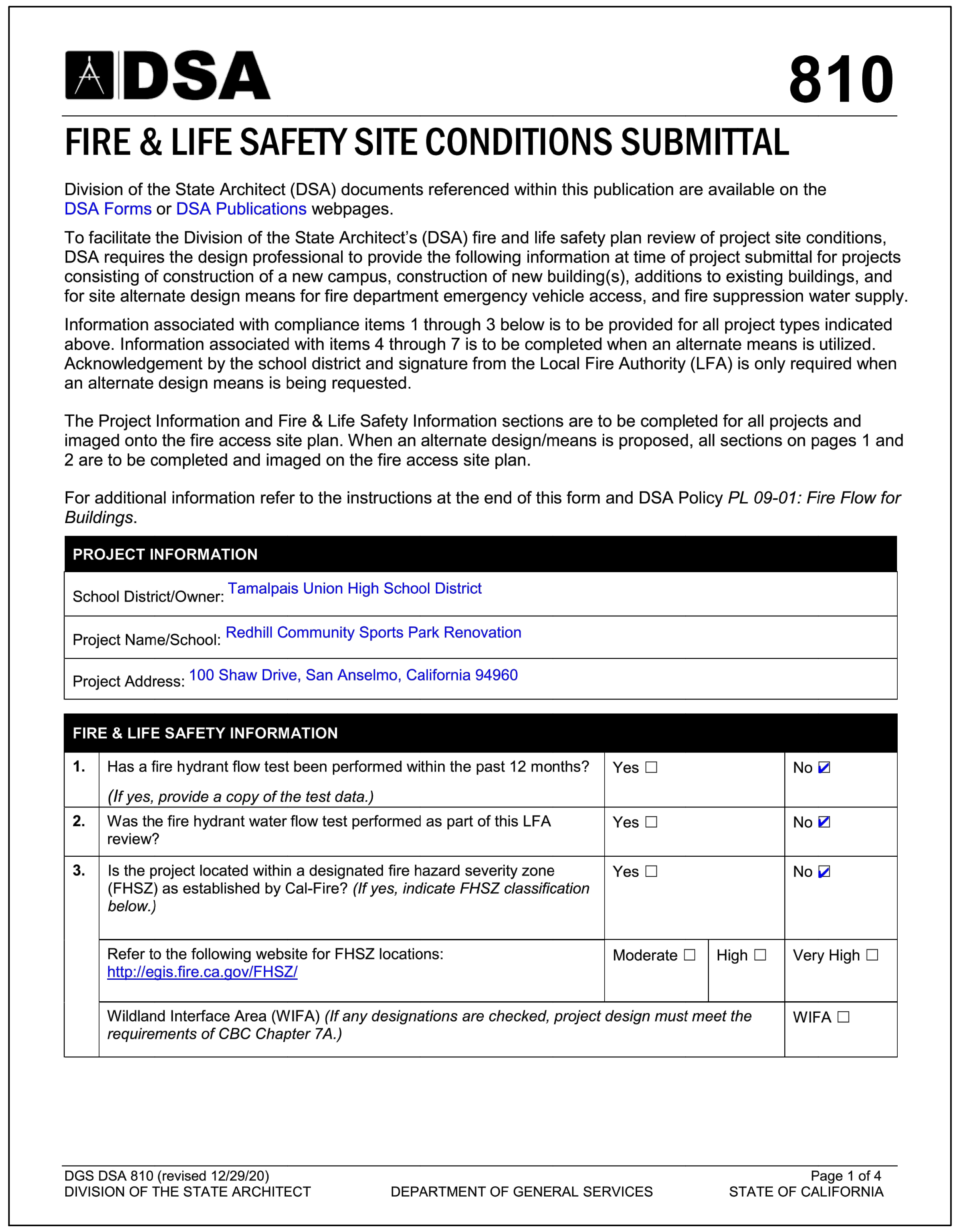
DSA SUBMITTAL

FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE: 02.17.2023
SCALE: AS SHOWN
PROJECT NO: TAM22-01

SHEET TITILE
SHEET INDEX AND GENERAL NOTES

SHEET NUMBER
G00.01



DSA 810

FIRE & LIFE SAFETY SITE CONDITIONS SUBMITTAL

Division of the State Architect (DSA) documents referenced within this publication are available on the DSA Forms or DSA Publications webpages.

To facilitate the Division of the State Architect's (DSA) fire and life safety plan review of project site conditions, DSA requires the design professional to provide the following information at time of project submittal for projects consisting of construction of a new campus, construction of new building(s), additions to existing buildings, and for site alternate design means for fire department emergency vehicle access, and fire suppression water supply.

Information associated with compliance items 1 through 3 below is to be provided for all project types indicated above. Information associated with items 4 through 7 is to be completed when an alternate means is utilized. Acknowledgement by the school district and signature from the Local Fire Authority (LFA) is only required when an alternate design means is being requested.

The Project Information and Fire & Life Safety Information sections are to be completed for all projects and imaged onto the fire access site plan. When an alternate design/means is proposed, all sections on pages 1 and 2 are to be completed and imaged on the fire access site plan.

For additional information refer to the instructions at the end of this form and DSA Policy *PL 09-01: Fire Flow for Buildings.*

PROJECT INFORMATION

School District/Owner: Tamalpais Union High School District

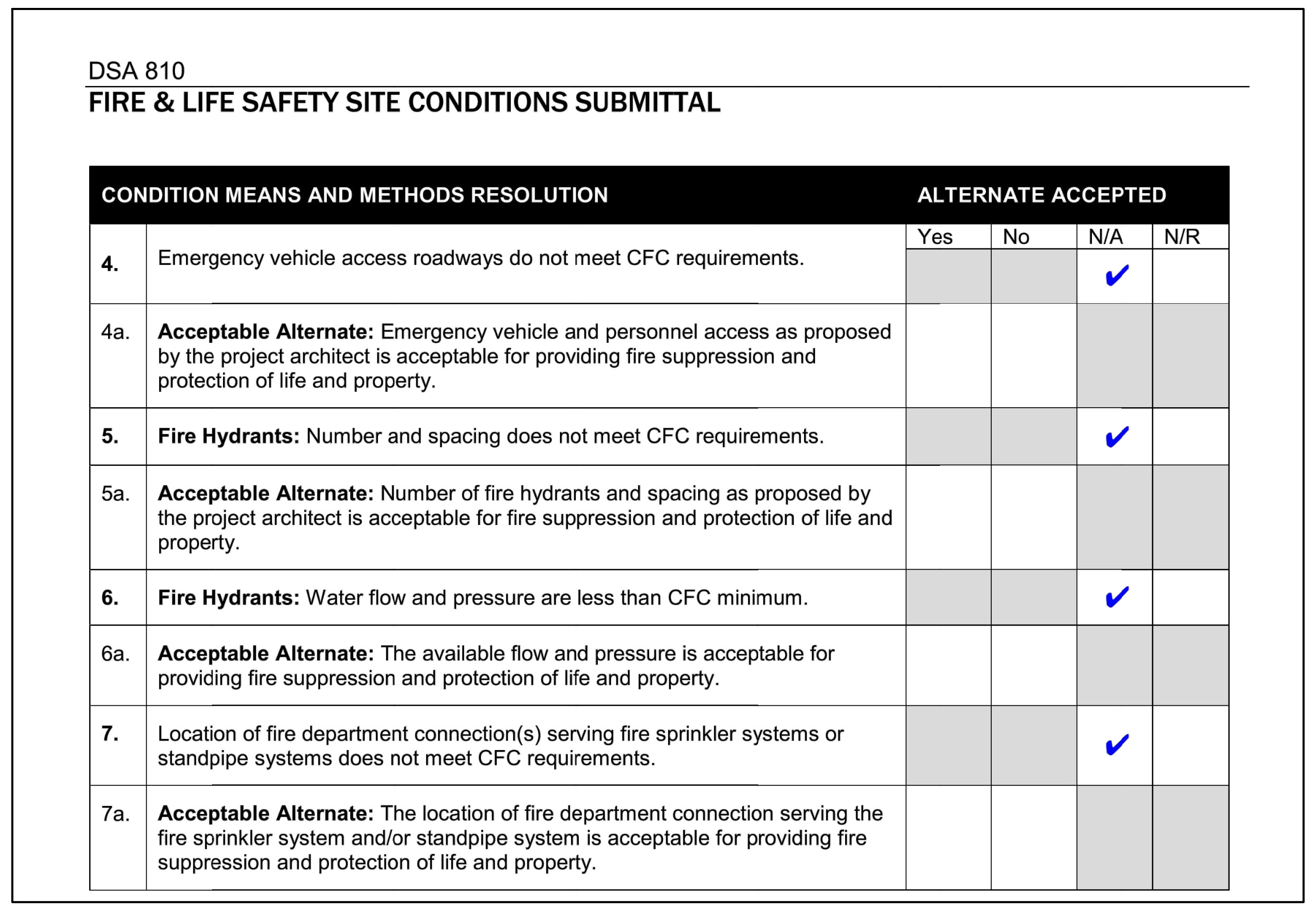
Project Name/School: Redhill Community Sports Park Renovation

Project Address: 100 Shaw Drive, San Anselmo, California 94960

FIRE & LIFE SAFETY INFORMATION

1.	Has a fire hydrant flow test been performed within the past 12 months? *(If yes, provide a copy of the test data.)*	Yes ☐		No ☑
2.	Was the fire hydrant water flow test performed as part of this LFA review?	Yes ☐		No ☑
3.	Is the project located within a designated fire hazard severity zone (FHSZ) as established by Cal-Fire? *(If yes, indicate FHSZ classification below.)*	Yes ☐		No ☑
	Refer to the following website for FHSZ locations: http://egis.fire.ca.gov/FHSZ/	Moderate ☐	High ☐	Very High ☐
	Wildland Interface Area (WIFA) *(If any designations are checked, project design must meet the requirements of CBC Chapter 7A.)*			WIFA ☐

DGS DSA 810 (revised 12/29/20) Page 1 of 4
DIVISION OF THE STATE ARCHITECT DEPARTMENT OF GENERAL SERVICES STATE OF CALIFORNIA



DSA 810
FIRE & LIFE SAFETY SITE CONDITIONS SUBMITTAL

	CONDITION MEANS AND METHODS RESOLUTION	**ALTERNATE ACCEPTED**			
		Yes	No	N/A	N/R
4.	Emergency vehicle access roadways do not meet CFC requirements.			✓	
4a.	**Acceptable Alternate:** Emergency vehicle and personnel access as proposed by the project architect is acceptable for providing fire suppression and protection of life and property.				
5.	**Fire Hydrants:** Number and spacing does not meet CFC requirements.			✓	
5a.	**Acceptable Alternate:** Number of fire hydrants and spacing as proposed by the project architect is acceptable for fire suppression and protection of life and property.				
6.	**Fire Hydrants:** Water flow and pressure are less than CFC minimum.			✓	
6a.	**Acceptable Alternate:** The available flow and pressure is acceptable for providing fire suppression and protection of life and property.				
7.	Location of fire department connection(s) serving fire sprinkler systems or standpipe systems does not meet CFC requirements.			✓	
7a.	**Acceptable Alternate:** The location of fire department connection serving the fire sprinkler system and/or standpipe system is acceptable for providing fire suppression and protection of life and property.				

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DISTRICT

PROJECT
RED HILL
COMMUNITY
SPORTS PARK
RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

DSA SUBMITTAL

FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE: 02.17.2023
SCALE: AS SHOWN
PROJECT NO: TAM22-01

SHEET TITILE
FIRE AND LIFE
SAFETY NOTES

SHEET NUMBER
G00.02

LEGEND

SYMBOL	DESCRIPTION
←---→	ACCESSIBLE ROUTE
←---→	EXISTING ACCESSIBLE ROUTE
▨	EXISTING ACCESSIBLE PARKING
▒	EXISTING EMERGENCY VEHICLE ACCESS, SEE 01-118557 UPLOADED TO DSA BOX AS A REFERENCE
▬ ▬	SAFE DISPERSAL AREA
●	(E) FIRE HYDRANT

SITE LEGEND

SYMBOL	DESCRIPTION
▬LOW▬LOW▬	LIMIT OF WORK
▭	(E) CONDITIONS, SEE TOPOGRAPHIC SURVEY
— - - —	PROPERTY LINE

ACCESSIBLE ROUTE NOTES

1. BARRIER FREE ACCESS ROUTE WITH FOLLOWING CHARACTERISTICS:
   - A. LESS THAN 1:20 MAXIMUM SLOPE WITHOUT RAMP.
   - B. LESS THAN 1:50 MAXIMUM CROSS SLOPE.
   - C. 48" MIN CLEAR IN WIDTH.
   - D. NON-SLIP SURFACE OF CONCRETE OR ASPHALT.
   - E. ACCESSIBLE ROUTE SHALL HAVE NO ABRUPT VERTICAL CHANGES EXCEEDING 1/4" VERTICAL OR 1/4" VERTICAL WITH AN ADDITIONAL 1/4" AT 2:1 MAXIMUM SLOPE, OR A TOTAL OF 1/2" AT 2:1 MAXIMUM SLOPE.
   - F. CONTRACTOR TO VERIFY THAT ALL BARRIERS IN THE ACCESSIBLE ROUTE HAVE BEEN REMOVED OR WILL BE REMOVED IN THIS PROJECT, & THAT ACCESSIBLE ROUTE COMPLIES WITH CBC 11B, DIVISION 4, PER CBC 11B-402.2.

2. CONSTRUCT ALL PAVED AREAS TO DRAIN

3. CONFORMANCE SURVEYING OF ACCESSIBLE ROUTE: THE CONTRACTOR SHALL PERFORM A CONFORMANCE SURVEY OF THE ACCESSIBLE ROUTE SHOWING CROSS SLOPES, LONGITUDINAL SLOPES AND SPOT ELEVATIONS ON A 10-FOOT GRID AFTER FINISH GRADING AND FINISH SURFACING IS COMPLETE. CORRECT ANY IRREGULARITIES FOUND AND RESURVEY CORRECTED AREAS TO DOCUMENT CONFORMANCE. SUBMIT CONFORMANCE SURVEYING OF ACCESSIBLE ROUTE TO ARCHITECT AND INCLUDE AS PART OF RECORD DRAWINGS

4. PROVIDE MINIMUM 12" WIDE BENCH AT TOP OF SLOPE ADJACENT TO PAVING, TYP.

5. SEE SUPPORTING DOCUMENT A#01-118557 FOR ESTABLISHED COMMUNITY SPORTS PARK ACCESSIBLE ROUTE

DURING CONSTRUCTION, IF POT ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CODE COMPLIANT ARE FOUND TO BE NONCONFORMING 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."

EGRESS & ACCESSIBILITY

DSA PR 15-01: REQUIRED INFORMATION FOR ACCESSIBLE ROUTE UPGRADES ON CONSTRUCTION DOCUMENTS

DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE STATEMENT:

THE ACCESSIBLE ROUTE IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS MEETS THE REQUIREMENTS OF THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE (CBC) ACCESSIBILITY PROVISIONS FOR ACCESSIBLE ROUTE 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 WITH THE CBC HAVE BEEN IDENTIFIED AND THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMPLIANCE HAS BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. ANY NONCOMPLIANT ELEMENTS, COMPONENTS OR PORTIONS OF THE ACCESSIBLE ROUTE THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE INDICATED IN THESE CONSTRUCTION DOCUMENTS.
DURING CONSTRUCTION , IF POT ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CBC COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THE ITEMS SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THE PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT.

ACCESSIBLE ROUTE, TECHNICAL REQUIREMENTS FOR ACCESSIBLE ROUTE

ACCESSIBLE ROUTE AS INDICATED ON PLAN IS A BARRIER-FREE ACCESS ROUTE WITHOUT ABRUPT LEVEL CHANGES EXCEEDING 1/2" IF BEVELED AT 1:2 MAXIMUM SLOPE OR VERTICAL LEVEL CHANGES NOT EXCEEDING 1/4" MAXIMUM AND AT LEAST 48" IN WIDTH. SURFACE IS STABLE, FIRM, AND SLIP-RESISTANT.
CROSS-SLOPE SHALL NOT BE STEEPER THAN 1:48 AND SLOPE IN THE DIRECTION OF TRAVEL SHALL NOT BE STEEPER THAN 1:20. ACCESSIBLE ROUTE SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM AND FREE OF OBJECTS PROTRUDING MORE THAN 4" FROM THE WALL, ABOVE 27" AND LESS THAN 80" ABOVE THE FLOOR. ARCHITECT SHALL VERIFY THAT THERE ARE NO BARRIERS IN THE ACCESSIBLE ROUTE.

NOTE: BASED ON PREVIOUS DSA SUBMITTALS, FIRE ACCESS BEYOND THE LIMIT OF WORK IS NOT AFFECTED BY THESE IMPROVEMENTS

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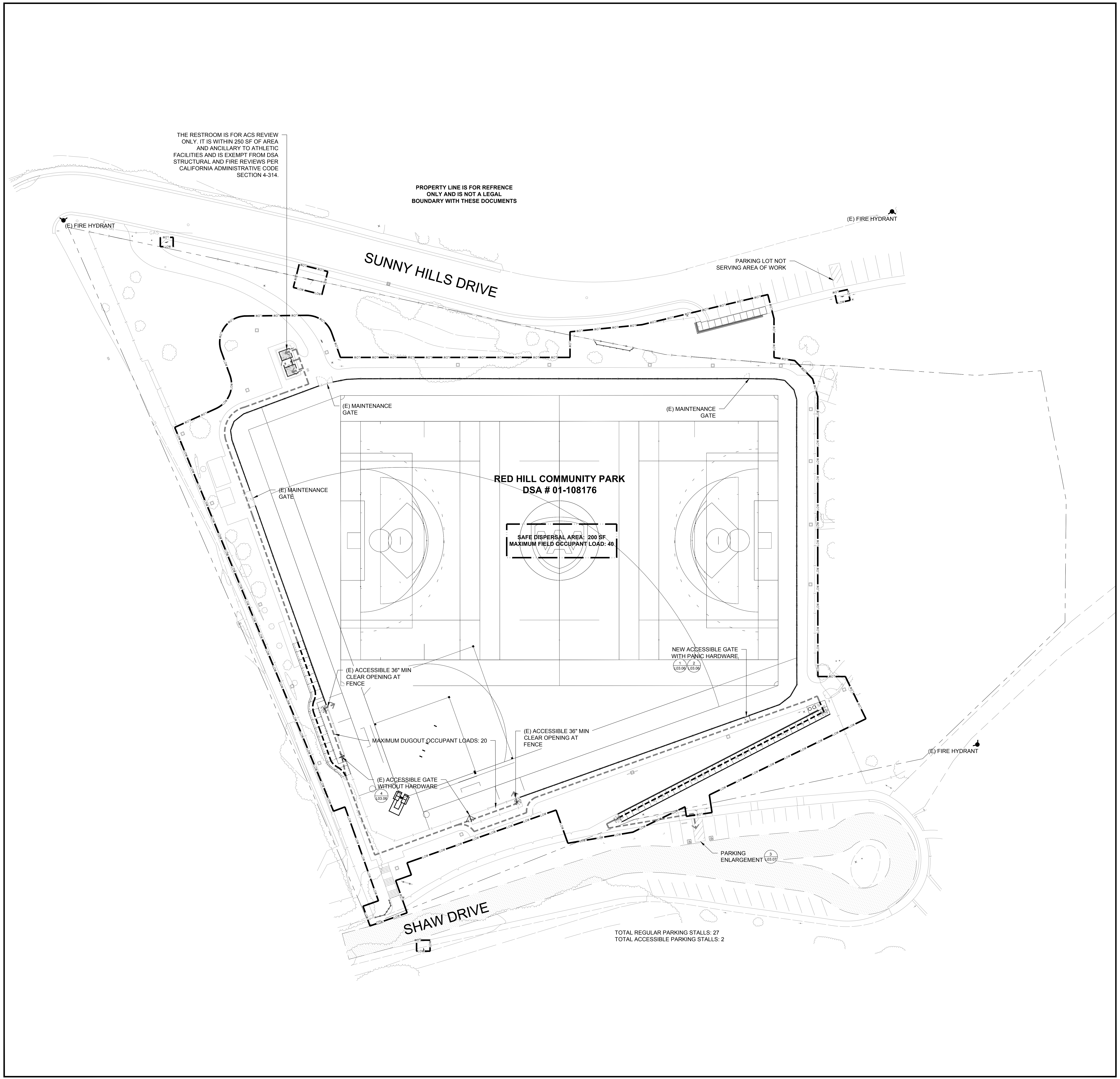
THE RESTROOM IS FOR ACS REVIEW ONLY. IT IS WITHIN 250 SF OF AREA AND ANCILLARY TO ATHLETIC FACILITIES AND IS EXEMPT FROM DSA STRUCTURAL AND FIRE REVIEWS PER CALIFORNIA ADMINISTRATIVE CODE SECTION 4-314.
PROPERTY LINE IS FOR REFRENCE ONLY AND IS NOT A LEGAL BOUNDARY WITH THESE DOCUMENTS
(E) FIRE HYDRANT
GAS
SUNNY HILLS DRIVE
(E) FIRE HYDRANT
PARKING LOT NOT SERVING AREA OF WORK
(E) MAINTENANCE GATE
(E) MAINTENANCE GATE
(E) MAINTENANCE GATE
RED HILL COMMUNITY PARK
DSA # 01-108176
SAFE DISPERSAL AREA: 200 SF
MAXIMUM FIELD OCCUPANT LOAD: 40
NEW ACCESSIBLE GATE WITH PANIC HARDWARE
1 L03.06
2 L03.06
(E) ACCESSIBLE 36" MIN CLEAR OPENING AT FENCE
MAXIMUM DUGOUT OCCUPANT LOADS: 20
(E) ACCESSIBLE 36" MIN CLEAR OPENING AT FENCE
(E) ACCESSIBLE GATE WITHOUT HARDWARE
4 L03.06
(E) FIRE HYDRANT
PARKING ENLARGEMENT
3 L03.07
SHAW DRIVE
LOW
WC
TOTAL REGULAR PARKING STALLS: 27
TOTAL ACCESSIBLE PARKING STALLS: 2

PLAN 0 30 60 FEET NORTH

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No. S4613
STRUCTURAL

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02.17.2023
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OWNER

TAMALPAIS UNION
HIGH SCHOOL
DISTRICT

PROJECT

RED HILL
COMMUNITY
SPORTS PARK
RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

DSA SUBMITTAL

FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

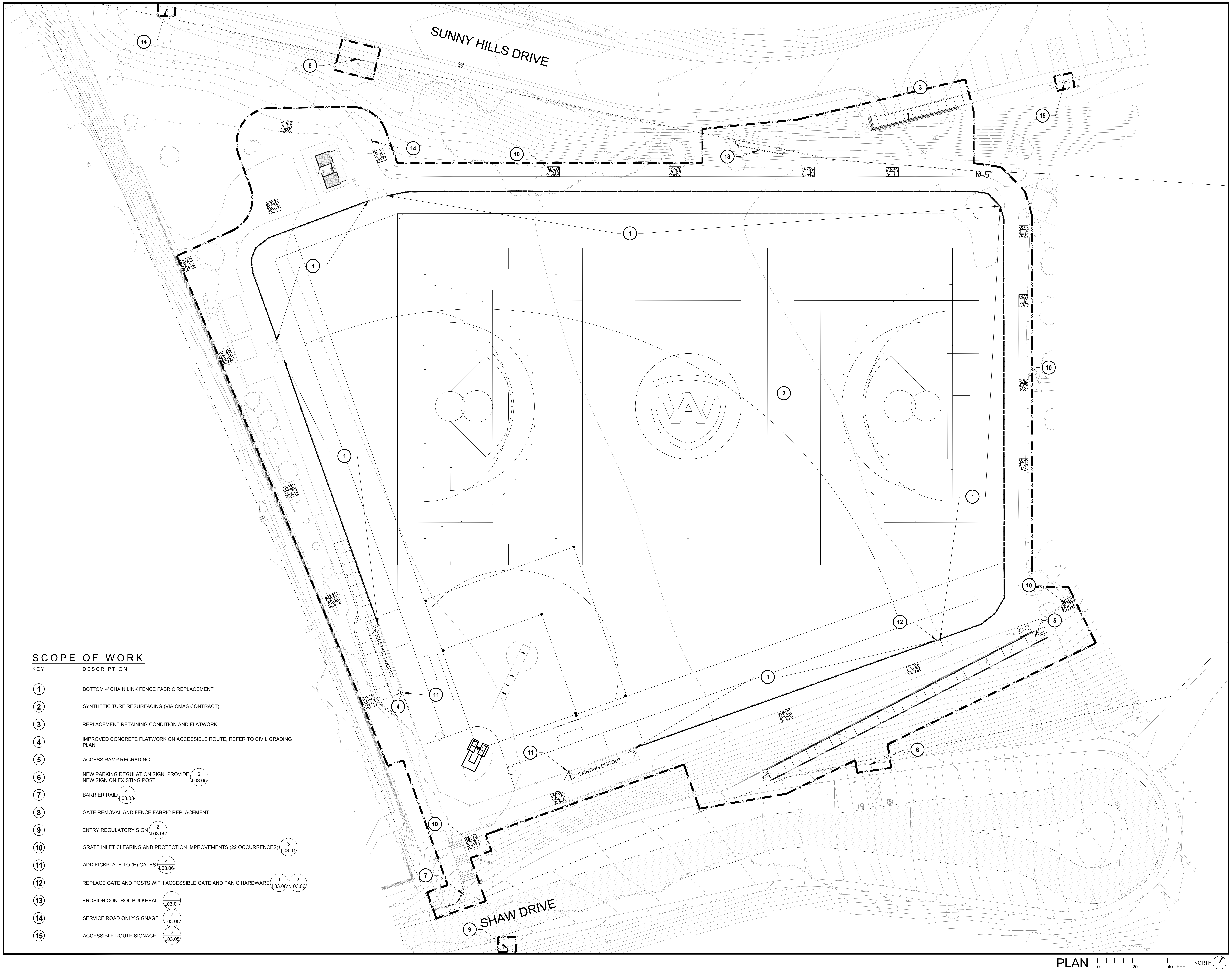
DATE:	02.17.2023
SCALE:	AS SHOWN
PROJECT NO:	TAM22-01

SHEET TITILE

SITE PLAN

SHEET NUMBER

G00.03



SCOPE OF WORK

KEY	DESCRIPTION
①	BOTTOM 4' CHAIN LINK FENCE FABRIC REPLACEMENT
②	SYNTHETIC TURF RESURFACING (VIA CMAS CONTRACT)
③	REPLACEMENT RETAINING CONDITION AND FLATWORK
④	IMPROVED CONCRETE FLATWORK ON ACCESSIBLE ROUTE, REFER TO CIVIL GRADING PLAN
⑤	ACCESS RAMP REGRADING
⑥	NEW PARKING REGULATION SIGN, PROVIDE NEW SIGN ON EXISTING POST 2/L03.05
⑦	BARRIER RAIL 4/L03.03
⑧	GATE REMOVAL AND FENCE FABRIC REPLACEMENT
⑨	ENTRY REGULATORY SIGN 2/L03.05
⑩	GRATE INLET CLEARING AND PROTECTION IMPROVEMENTS (22 OCCURRENCES) 3/L03.01
⑪	ADD KICKPLATE TO (E) GATES 4/L03.06
⑫	REPLACE GATE AND POSTS WITH ACCESSIBLE GATE AND PANIC HARDWARE 1/L03.06 2/L03.06
⑬	EROSION CONTROL BULKHEAD 1/L03.01
⑭	SERVICE ROAD ONLY SIGNAGE 7/L03.05
⑮	ACCESSIBLE ROUTE SIGNAGE 3/L03.05

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OWNER

TAMALPAIS UNION HIGH SCHOOL DISTRICT

PROJECT

RED HILL COMMUNITY SPORTS PARK RENOVATION

100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

DSA SUBMITTAL

FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE: 02.17.2023
SCALE: AS SHOWN
PROJECT NO: TAM22-01

SHEET TITILE

SCOPE OF WORK

SHEET NUMBER

G00.04

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EROSION CONTROL NOTES

1. REFER TO CIVIL DRAWINGS FOR EROSION CONTROL DRAWINGS AND DETAILS.
2. THIS PLAN MAY NOT COVER ALL THE SITUATIONS THAT ARISE DURING CONSTRUCTION DUE TO UNANTICIPATED FIELD CONDITIONS. IN GENERAL, THE CONTRACTOR IS RESPONSIBLE FOR KEEPING SEDIMENT STORM RUN OFF FROM LEAVING THE SITE. FIBER ROLLS, STRAW WATTLES, AND SILT FENCES SHALL BE USED BY THE CONTRACTOR ON AN AS NEEDED BASIS TO INHIBIT SILT FROM LEAVING THE SITE AND ENTERING THE STORM DRAIN SYSTEM.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES TO PUBLIC AND/OR PRIVATELY OWNED AND MAINTAINED ROADS CAUSED BY THE CONTRACTOR'S GRADING ACTIVITIES, AND SHALL BE RESPONSIBLE FOR THE CLEANUP OF ANY MATERIAL SPILLED ON ANY PUBLIC ROAD ON THE HAUL ROUTE. ADJACENT PUBLIC ROADS SHALL BE CLEANED DURING ALL GRADING AND EXCAVATION ACTIVITIES.
4. EROSION CONTROL FACILITIES SHALL BE MAINTAINED DAILY. THE NAME OF THE PERSON RESPONSIBLE FOR THE DAILY MAINTENANCE OF THESE FACILITIES SHALL BE ON RECORD WITH THE PROJECT MANAGER ALONG WITH A PHONE NUMBER WHERE THEY CAN BE REACHED 24 HOURS A DAY. THESE FACILITIES SHALL CONTROL AND CONTAIN EROSION-CAUSED SILT DEPOSITS AND PROVIDE FOR THE SAFE DISCHARGE OF SILT-FREE STORM WATER INTO EXISTING AND PROPOSED STORM DRAIN FACILITIES. DESIGN OF THESE FACILITIES MUST BE APPROVED AND UPDATED EACH YEAR.
5. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SUB- CONTRACTORS, AND SUPPLIERS ARE AWARE OF ALL STORM WATER QUALITY MEASURES & IMPLEMENT SUCH MEASURES. FAILURE TO COMPLY WITH THE APPROVED CONSTRUCTION WILL RESULT IN THE ISSUANCE OF CORRECTION NOTICES, CITATIONS AND/OR A PROJECT STOP ORDER.
6. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE OPERABLE YEAR AROUND OR UNTIL VEGETATION IS ESTABLISHED ON SLOPED SURFACES.
7. EXPOSED EARTHEN AREAS TO BE STABILIZED SHALL BE SEEDED AND MULCHED IMMEDIATELY AFTER EACH AREA HAS BEEN GRADED. CONTRACTOR SHALL BE RESPONSIBLE FOR INITIAL WATERING OF AREAS TO ESTABLISH GROWTH AND STABILIZE THE SLOPES OF THE THE GRADED AREAS WITH VEGETATION, AND TO RE-SEED ANY AREAS IN WHICH VEGETATION DOES NOT INITIAL TAKE HOLD.
8. DURING THE RAINY SEASON, ALL PAVED AREAS ARE TO BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE IS TO BE MAINTAINED SO AS TO MINIMIZE SEDIMENT RUNOFF TO ANY STORM DRAIN SYSTEM.
9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT ALL EROSION CONTROL FACILITIES DAILY AND REPAIR ANY DAMAGED FACILITIES IMMEDIATELY.
10. BORROW AND TEMPORARY STOCKPILES SHALL BE PROTECTED WITH APPROPRIATE EROSION CONTROL MEASURES (TARPS, FIBER ROLLS, STRAW WATTLES, SILT FENCES ETC.) TO ENSURE SILT DOES NOT LEAVE THE SITE OR ENTER THE STORM DRAIN SYSTEM. REFER TO EROSION CONTROL AND SEDIMENT CONTROL FIELD MANUAL, 3RD EDITION, PREPARED BY THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SAN FRANCISCO BAY REGION.
11. ALL TRUCK TIRES SHALL BE CLEANED PRIOR TO EXITING THE SITE.
12. ALL DIRT PILES/STOCKPILES AND HAUL TRUCKS SHALL BE COVERED.
13. THE CONTRACTOR SHALL IMPLEMENT EROSION AND SEDIMENT CONTROL PRACTICES DETAILED IN THE EROSION CONTROL AND SEDIMENT CONTROL FIELD MANUAL, 3RD EDITION.
14. DURING PERIODS WHEN STORMS ARE FORECAST:
    A. EXCAVATED SOILS SHOULD NOT BE PLACED IN STREETS OR ON PAVED AREAS.
    B. ANY EXCAVATED SOILS SHOULD BE REMOVED FROM THE STREET BY THE END OF THE DAY.
    C. WHERE STOCKPILING IS NECESSARY, USE A TARPAULIN OR SURROUND THE STOCKPILED MATERIAL WITH FIBER ROLLS, STRAW WATTLES, GRAVEL SEDIMENT BARRIER, SILT FENCE, OR OTHER RUNOFF CONTROLS.
    D. USE INLET CONTROLS AS NEEDED (DRAINAGE INLET PROTECTION) FOR STORM DRAIN ADJACENT TO THE PROJECT SITE OR STOCKPILED SOIL.
    E. THOROUGHLY SWEEP ALL PAVED AREAS EXPOSED TO SOIL EXCAVATION AND PLACEMENT.
14. DURING PERIODS WHEN STORMS ARE NOT FORECAST:
    A. PREVENT STOCKPILED MATERIAL FROM ENTERING THE STORM DRAIN SYSTEM.
    B. THOROUGHLY REMOVE LOOSE SOIL VIA SWEEPING FOLLOWING REMOVAL OF DIRT.
15. DUST CONTROL SHOULD BE PRACTICED ON ALL CONSTRUCTION SITES WITH EXPOSED SOILS AS NEEDED. IT IS IMPORTANT IN WINDY OR WIND-PRONE AREAS. DUST CONTROL IS CONSIDERED A TEMPORARY MEASURE AND AS AS INTERMEDIATE TREATMENT BETWEEN SITE DISTURBANCE AND CONSTRUCTION, PAVING, OR REVEGETATION. REFER TO EROSION CONTROL AND SEDIMENT CONTROL FIELD MANUAL, 3RD EDITION, PREPARED BY THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SAN FRANCISCO BAY REGION.

DRAINAGE INLET SEDIMENT BARRIERS

1. DRAINAGE INLET SEDIMENT BARRIERS SHALL BE INSTALLED AS SOON AS THE STORM DRAINAGE SYSTEM IS INSTALLED.
2. PRIOR TO PAVING, FIBER ROLLS AND STRAW WATTLES SHALL BE INSTALLED AROUND EACH DROP INLET. AFTER PAVING IS COMPLETE AROUND EACH DROP INLET, BLOCK AND GRAVEL BAG SEDIMENT BARRIERS SHALL BE INSTALLED AROUND THE DROP INLETS UNTIL ALL EXPOSED EARTHEN AREAS HAVE BEEN STABILIZED AND THE PROJECT SITE FACILITIES ARE OPERATIONAL, AT WHICH TIME THESE FACILITIES SHALL BE REMOVED.
3. CONTRACTOR SHALL AFFIX STORM DRAIN MARKER TO ALL STORM DRAIN INLET STRUCTURES.
4. SEE CIVIL DRAWINGS FOR INLET PROTECTION AND EROSION CONTROL PLAN

TREE PRESERVATION AND PROTECTION NOTES

1. PRE-CONSTRUCTION MEETING:
   IT IS IMPORTANT THAT CONSTRUCTION CREWS UNDERSTAND TREE PROTECTION REQUIREMENTS. PERSONNEL WORKING ON-SITE SHOULD BE PROVIDED WITH AN ORIENTATION TO TREE PRESERVATION MEASURES AND MONITORING FOR TREE PRESERVATION.
2. APPRAISED VALUE:
    A. IF A TREE IS DAMAGED, A CERTIFIED ARBORIST DETERMINES THE TREE APPRAISAL VALUE BY ADJUSTING THE TREE'S BASIC VALUE BY ITS CONDITION, LOCATION AND SPECIES USING THE MOST RECENT EDITION OF THE GUIDE FOR PLANT APPRAISAL. THE FORMULA USED SHOULD BE NOTED.
    B. REFER TO THE COUNCIL OF TREE AND LANDSCAPE APPRAISERS, CURRENT EDITION, GUIDE FOR PLANT APPRAISAL, CHAMPAIGN, IL: INTERNATIONAL SOCIETY OF ARBORICULTURE.
3. TREE PROTECTION ZONE (TPZ):
   EACH TREE TO BE PROTECTED SHALL HAVE A DESIGNATED TPZ IDENTIFYING THE AREA SUFFICIENTLY LARGE ENOUGH TO PROTECT THE TREE, ROOTS AND SOIL FROM DISTURBANCE. THE TPZ IS DEFINED AS THE AREA UNDER THE TREE CANOPY AND EXTENDING TO 1'-0" PAST THE DRIPLINE OF THE TREE. FOR EXAMPLE, A TREE WITH A CANOPY 25' WIDE IN DIAMETER WOULD HAVE A TPZ OF 27' WIDE. ANY DEVIATION IN DETERMINING THE TPZ WILL REQUIRE APPROVAL BY THE CONSTRUCTION MANAGER. SEE TREE PROTECTION DETAIL
4. PROTECTIVE TREE FENCING FOR TREES:
   FENCED ENCLOSURES SHALL BE ERECTED AROUND TREES TO BE PROTECTED TO ESTABLISH THE TPZ IN WHICH NO SOIL OR ROOT DISTURBANCE IS PERMITTED AND ACTIVITIES ARE RESTRICTED. MAINTAIN TPZ FREE OF WEEDS AND TRASH.
    A. SIZE AND TYPE OF FENCE: ALL TREES TO BE PRESERVED SHALL BE PROTECTED WITH A 6' HIGH, MINIMUM 11 GAUGE CHAIN LINK FENCE. MOUNT FENCES ON 2-INCH DIAMETER GALVANIZED STEEL POSTS MOUNTED ON SUPPORT FEET.
    B. DURATION: TREE FENCING SHALL BE ERECTED BEFORE ANY DEMOLITION, GRADING OR CONSTRUCTION BEGINS AND SHALL REMAIN IN PLACE THROUGH CONSTRUCTION.
    C. TREE PROTECTION SIGN: A WARNING SIGN SHALL BE PROMINENTLY DISPLAYED ON EACH FENCE. SIGN SHALL NOT BE LESS THAN 12" X 12" AND SHALL READ: "TREE PROTECTION FENCE. DO NOT REMOVE OR RELOCATE WITHOUT AUTHORIZATION."
    D. PLACEMENT: TREE PROTECTION FENCE SHALL BE LOCATED 1'-0" OUTSIDE THE TREE DRIPLINE OR AS OTHERWISE SHOWN ON PLAN. A TREE PROTECTION FENCE LOCATED WITHIN THE TPZ SHALL NOT EXEMPT THE CONTRACTOR FROM COMPLYING WITH THE REQUIREMENTS OF THE TPZ FOR THE ENTIRE LIMITS OF THE TPZ.
    E. TEMPORARY REMOVAL OR RELOCATION: RELOCATION OR REMOVAL FOR CONSTRUCTION REQUIRES AUTHORIZATION AND IS PERMITTED ONLY AS REQUIRED FOR CONSTRUCTION. FENCE MUST BE RESTORED TO ORIGINAL LOCATION AS SOON AS PRACTICAL AS CONSTRUCTION ACTIVITIES PERMIT.
5. ACTIVITIES PROHIBITED WITHIN THE TPZ INCLUDE:
    A. STORAGE OF PARKED VEHICLES, BUILDING MATERIALS, REFUSE, EXCAVATED SPOILS OR DUMPING OF POISONOUS MATERIALS, INCLUDING BUT NOT LIMITED TO PAINT, PETROLEUM PRODUCTS, CONCRETE, STUCCO MIX OR DIRTY WATER
    B. THE USE OF TREE TRUNKS AS A WINCH SUPPORT, ANCHORAGE, AS A TEMPORARY POWER POLE, SIGN POSTS OR OTHER SIMILAR FUNCTION
    C. CUTTING OF TREE ROOTS BY UTILITY TRENCHING, FOUNDATION DIGGING, PLACEMENT OF CURBS AND TRENCHES AND OTHER MISCELLANEOUS EXCAVATION
    D. SOIL DISTURBANCE, SOIL COMPACTION OR GRADE CHANGES
    E. DRAINAGE CHANGES
    F. FIRES
6. ACTIVITIES PERMITTED OR REQUIRED WITHIN THE TPZ INCLUDE:
    A. MULCHING - DURING CONSTRUCTION, IT IS RECOMMENDED THAT WOOD CHIPS OR SIMILAR MATERIAL BE SPREAD WITHIN THE TPZ TO A 2-INCH DEPTH, LEAVING THE TRUNK CLEAR OF MULCH.
    B. ROOT BUFFER - WHEN AREAS WITHIN THE TPZ CANNOT BE FENCED, A ROOT BUFFER IS REQUIRED AND SHALL COVER THE ROOT ZONE.
    C. IRRIGATION, AERATION, FERTILIZING OR OTHER BENEFICIAL PRACTICES THAT HAVE BEEN SPECIFICALLY APPROVED FOR USE BY THE LANDSCAPE ARCHITECT WITHIN THE TPZ.
    D. EXISTING IRRIGATION IS TO BE MAINTAINED AND OPERATED 100% DURING CONSTRUCTION. SEE IRRIGATION PLANS.
7. ROOT BUFFER SHALL BE DEFINED AS: A TEMPORARY LAYER OF MATERIAL TO PROTECT THE SOIL TEXTURE AND ROOTS. THE BUFFER SHALL CONSIST OF A BASE COURSE OF BARK OR WOOD CHIPS SPREAD OVER THE ROOT AREA, KEEPING ONE FOOT CLEAR OF THE TRUNK CLEAR, TO A 4”- 6” DEPTH, CAPPED BY A BASE COURSE OF 3/4-INCH QUARRY GRAVEL TO STABILIZE A 3/4” PLYWOOD ON TOP.
8. EROSION CONTROL
   IF A TREE IS ADJACENT TO OR IN THE IMMEDIATE PROXIMITY TO A GRADE SLOPE OF 8% (23 DEGREES) OR MORE, THEN APPROVED EROSION CONTROL OR SILT BARRIERS SHALL BE INSTALLED OUTSIDE THE TPZ TO PREVENT SILTATION AND/OR EROSION WITHIN THE TPZ.
9. TUNNELING AND DIRECTIONAL DRILLING
   IF TRENCHING OR PIPE INSTALLATION HAS BEEN APPROVED WITHIN THE TPZ, THEN THE TRENCH SHALL BE EITHER CUT BY HAND, AIR SPADE OR BY MECHANICALLY BORING THE TUNNEL UNDER THE ROOTS WITH A HORIZONTAL DIRECTIONAL DRILL AND HYDRAULIC OR PNEUMATIC AIR EXCAVATION TECHNOLOGY. IN ALL CASES, INSTALL THE UTILITY PIPE, IMMEDIATELY BACKFILL WITH SOIL AND SOAK WITHIN THE SAME DAY.
10. TREE PRUNING AND SURGERY
    A. ROOT PRUNING: ROOT PROTECTION MEASURES MUST BE IN PLACE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES. NECESSARY ROOT PRUNING IS BEST ACCOMPLISHED PRIOR TO THE BEGINNING OF CONSTRUCTION ACTIVITIES WHEN EXCAVATION EQUIPMENT WILL BE USED. AFTER BEING EXPOSED BY HAND OR AIR EXCAVATION, ROOTS ARE PRUNED UNDER ARBORIST SUPERVISION. CONSTRUCTION ACTIVITIES ARE THEN FREE TO OCCUR OUTSIDE OF THE ROOT PRUNING BOUNDARY.
    B. DO NOT CUT MAIN LATERAL ROOTS OR TAPROOTS. CUT ONLY SMALLER ROOTS THAT INTERFERE WITH INSTALLATION OF UTILITIES. CUT ROOTS WITH SHARP PRUNING INSTRUMENTS; DO NOT BREAK OR CHOP.
    C. BRANCH PRUNING: TPZ MUST BE IN PLACE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES. IF NECESSARY, BRANCHES IN THE WAY OF NEW IMPROVEMENTS OR IN POOR CONDITION MAY BE PRUNED UNDER ARBORIST SUPERVISION.
10. TREE REMOVAL PROCEDURE
    TREES MAY ONLY BE REMOVED IF SPECIFICALLY NOTED ON PLAN OR APPROVED FOR REMOVAL BY THE OWNER. WHEN TREES ARE REMOVED, TREE REMOVAL PRACTICES APPLY:
    A. ANY TREE TO BE REMOVED THAT MAY IMPACT A PROTECTED TREE SHALL BE DONE UNDER THE SUPERVISION OF A CERTIFIED ARBORIST.
    B. THE REMOVAL OF TREES THAT EXTEND INTO THE BRANCHES OR ROOTS OF PROTECTED TREES SHALL NOT BE ATTEMPTED BY DEMOLITION OR CONSTRUCTION PERSONNEL, GRADING OR OTHER HEAVY EQUIPMENT. A CERTIFIED ARBORIST OR CERTIFIED TREE WORKER SHALL REMOVE OR OVERSEE THE REMOVAL OF THE TREE IN A MANNER THAT CAUSES NO DAMAGE ABOVE OR BELOW GROUND TO TREES THAT SHALL REMAIN.
11. SUPPLEMENTAL IRRIGATION:
    PROVIDE SUPPLEMENTAL IRRIGATION, AS REQUIRED, BASED ON THE LEVEL OF ROOT LOSS, SOIL CONDITIONS, TREE HEALTH AND TIME OF YEAR.

DEMOLITION LEGEND

SYMBOL	DESCRIPTION
—○—○—○—	CONSTRUCTION FENCE TO REMAIN IN PLACE FOR THE DURATION OF CONSTRUCTION. PLACE GATES APPROVED BY PROJECT MANAGER. ADJUST LOCATION AS REQUIRED. COORDINATE THE SCHEDULE FOR THE WORK BEYOND THE CONSTRUCTION FENCE AS SHOWN WITH DISTRICT AND MODIFY THE CONSTRUCTION FENCE LAYOUT WHEN NEEDED. MINIMUM 2 WEEKS ADVANCE NOTICE IS REQUIRED. 3/L03.06
◌ TREE	PROTECT (E) TREE TO REMAIN. PROTECT TO THE LIMITS OF THE TREE PROTECTION ZONE (TPZ) AS DEFINED IN THE TREE PROTECTION NOTES AND AS SHOWN ON DETAIL
◌	INLET PROTECTION, SEE CIVIL PLANS
⟵ ▬ ▬ ▬ ⟶	PRIMARY STABILIZED CONSTRUCTION VEHICLE ACCESS, SEE CIVIL DRAWINGS
▩	POSSIBLE STAGING AREA, COORDINATE WITH PROJECT MANAGER.
▨	DEMOLITION AREA
/ / / / / / / /	DEMO FENCE FABRIC AS NEEDED, ADD FENCE FABRIC

SITE LEGEND

SYMBOL	DESCRIPTION
▭	(E) CONDITIONS, SEE TOPOGRAPHIC SURVEY
—— – – ——	PROPERTY LINE
▬ LOW ▬	LIMIT OF WORK

GENERAL REQUIREMENTS

1. REMOVE AND DISPOSE OF CONSTRUCTION AND WASTE DEBRIS FOUND WITHIN SITE INCLUDING BUT NOT LIMITED TO CONCRETE, ASPHALT, TRASH, UTILITY PIPES, COBBLE, METAL, ETC. UNLESS OTHERWISE NOTED. ALL ABANDONED AND UNUSED CONSTRUCTION MATERIALS FOUND ON SITE TO BE COORDINATED WITH SMUHSD FOR RELOCATION OR TO BE DISPOSED.
2. REFER TO CIVIL DRAWINGS FOR EROSION CONTROL PLANS AND DETAILS.
3. DAMAGE TO AREAS OUTSIDE OF LIMIT OF WORK CAUSED BY WORK WITHIN LIMIT OF WORK SHALL BE REPAIRED BY CONTRACTOR AT NO ADDITIONAL COST.
4. COMPLETELY SECURE LIMIT OF WORK LINE WITH TEMPORARY CONSTRUCTION FENCING. ADJUST LOCATIONS AS REQUIRED.
5. STORAGE SHALL BE ON-SITE AND AS APPROVED BY THE OWNER'S REPRESENTATIVE.
6. PROTECT AND VERIFY LOCATION AND DEPTH OF (E) UTILITIES TO REMAIN.
7. ALL ABANDONED AND UNUSED UTILITIES FOUND DURING EXCAVATION TO BE DEMOLISHED AND REMOVED COMPLETELY WITHIN LIMIT OF WORK.
8. REMOVE OR DISPOSE SHALL TYPICALLY MEAN REMOVE AND DISPOSE OFF-SITE, LEGALLY, UNLESS OTHERWISE NOTED.
9. COORDINATE CONSTRUCTION STAGING AREA WITH DISTRICT

DSA DEMOLITION NOTE:

1. NO DEMOLITION SHALL BEGIN UNTIL PLANS INCLUDING DEMOLITION PLAN ARE APPROVED BY DSA

CONTRACTOR UTILITY LOCATION / VERIFICATION

1. BEFORE COMMENCING DEMOLITION, CONTRACTOR SHALL CONSULT THE REFERENCE DRAWINGS OF PREVIOUS SITE PROJECTS PROVIDED, AND USE FIELD VERIFICATION TECHNIQUES TO ASCERTAIN THE EXISTENCE AND LOCATION OF UTILITIES AND OTHER APPURTENANCES TO BE PROTECTED IN PLACE.

IF THE CONTRACTOR ENCOUNTERS ERRORS OR DISCREPANCIES ON THE DRAWINGS, OR SITE CONDITIONS WHICH PREVENT OR DELAY THE COMPLETION OF WORK AS INDICATED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND LANDSCAPE ARCHITECT BY THE TIME OF BID OF ALL SUCH ERRORS, DISCREPANCIES AND OMISSIONS. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE LANDSCAPE ARCHITECT AND THE OWNER HARMLESS IF AFTER CONTRACTING FOR THE WORK HE HAS MONETARY DAMAGE BECAUSE OF SITE CONDITIONS, ERRORS, DISCREPANCIES OR OMISSIONS AT THE TIME OF BID.

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DIV. OF THE STATE ARCHITECT
APP: 01-120489 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 3/20/2022

ARCHITECT/ ENGINEER
ZFA STRUCTURAL ENGINEERS
1212 fourth street | suite z
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WILLIAM E. FEE
2537
Bill Fee
Signature
12.31.2024
Renewal Date
02.17.2023
Date

OWNER
TAMALPAIS UNION
HIGH SCHOOL
DISTRICT

PROJECT
RED HILL
COMMUNITY
SPORTS PARK
RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

DSA SUBMITTAL

FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE:	02.17.2023
SCALE:	AS SHOWN
PROJECT NO:	TAM22-01

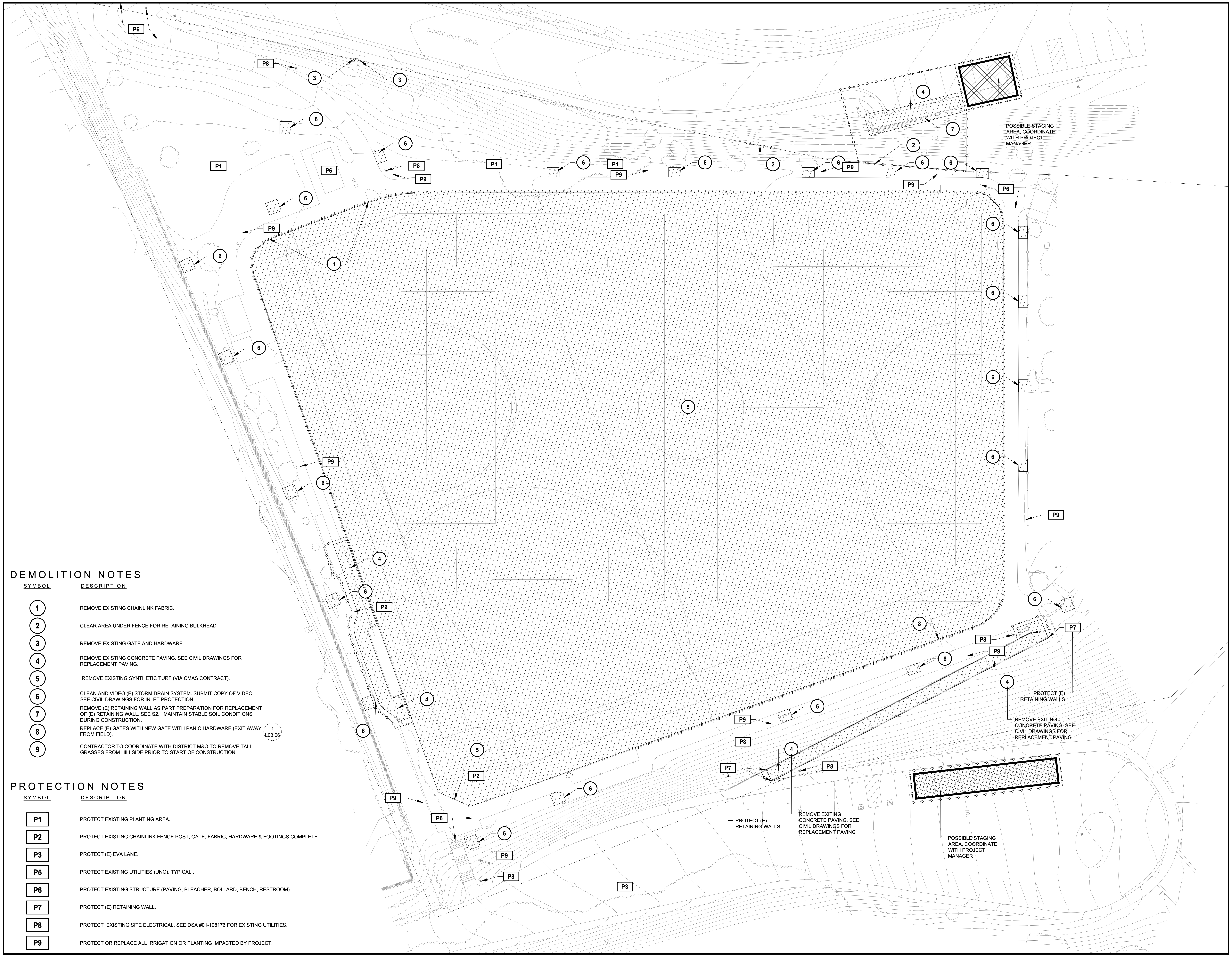
SHEET TITILE

DEMO LEGEND

SHEET NUMBER

L01.00

Peter Stanley 2/17/2023 4:50 PM


SUNNY HILLS DRIVE
P1
P2
P3
P6
P7
P8
P9
1
2
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8
85
90
95
100
105
POSSIBLE STAGING AREA, COORDINATE WITH PROJECT MANAGER
PROTECT (E) RETAINING WALLS
REMOVE EXITING CONCRETE PAVING. SEE CIVIL DRAWINGS FOR REPLACEMENT PAVING
PROTECT (E) RETAINING WALLS
REMOVE EXITING CONCRETE PAVING. SEE CIVIL DRAWINGS FOR REPLACEMENT PAVING
POSSIBLE STAGING AREA, COORDINATE WITH PROJECT MANAGER

DEMOLITION NOTES

SYMBOL	DESCRIPTION
①	REMOVE EXISTING CHAINLINK FABRIC.
②	CLEAR AREA UNDER FENCE FOR RETAINING BULKHEAD
③	REMOVE EXISTING GATE AND HARDWARE.
④	REMOVE EXISTING CONCRETE PAVING. SEE CIVIL DRAWINGS FOR REPLACEMENT PAVING.
⑤	REMOVE EXISTING SYNTHETIC TURF (VIA CMAS CONTRACT).
⑥	CLEAN AND VIDEO (E) STORM DRAIN SYSTEM. SUBMIT COPY OF VIDEO. SEE CIVIL DRAWINGS FOR INLET PROTECTION.
⑦	REMOVE (E) RETAINING WALL AS PART PREPARATION FOR REPLACEMENT OF (E) RETAINING WALL. SEE S2.1 MAINTAIN STABLE SOIL CONDITIONS DURING CONSTRUCTION.
⑧	REPLACE (E) GATES WITH NEW GATE WITH PANIC HARDWARE (EXIT AWAY FROM FIELD). 1 L03.06
⑨	CONTRACTOR TO COORDINATE WITH DISTRICT M&O TO REMOVE TALL GRASSES FROM HILLSIDE PRIOR TO START OF CONSTRUCTION

PROTECTION NOTES

SYMBOL	DESCRIPTION
P1	PROTECT EXISTING PLANTING AREA.
P2	PROTECT EXISTING CHAINLINK FENCE POST, GATE, FABRIC, HARDWARE & FOOTINGS COMPLETE.
P3	PROTECT (E) EVA LANE.
P5	PROTECT EXISTING UTILITIES (UNO), TYPICAL .
P6	PROTECT EXISTING STRUCTURE (PAVING, BLEACHER, BOLLARD, BENCH, RESTROOM).
P7	PROTECT (E) RETAINING WALL.
P8	PROTECT EXISTING SITE ELECTRICAL, SEE DSA #01-108176 FOR EXISTING UTILITIES.
P9	PROTECT OR REPLACE ALL IRRIGATION OR PLANTING IMPACTED BY PROJECT.

PLAN 0 20 40 FEET NORTH

Know what's below. Call 811 before you dig.

Peter Stanley 2/17/2023 4:50 PM

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DIV. OF THE STATE ARCHITECT
APP: 01-120489 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 3/20/2022

ARCHITECT/ ENGINEER
ZFA STRUCTURAL ENGINEERS

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OWNER
TAMALPAIS UNION HIGH SCHOOL DISTRICT

PROJECT
RED HILL COMMUNITY SPORTS PARK RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

DSA SUBMITTAL

FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE: 02.17.2023
SCALE: AS SHOWN
PROJECT NO: TAM22-01

SHEET TITLE
DEMO PLAN

SHEET NUMBER
L01.01

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MATERIALS LEGEND

SYMBOL	KEY	DESCRIPTION
		CHAIN LINK FENCE
━ ━ ━	CLF	REPLACE CHAIN LINK FABRIC TO MATCH EXISTING, REPLACE FROM FINISH GRADE TO MID-RAIL AT SPORTS FIELD FENCE, SEE MATERIALS PLAN, SUBMIT SHOP DRAWINGS
		SIGN AND GATE SCHEDULE
	G1	NEW ACCESSIBLE GATE WITH PANIC HARDWARE TO REPLACE (E) GATE (EXIT AWAY FROM FIELD) 1/L03.06 2/L03.06
	G2	ADD KICKPLATE TO (E) GATE 4/L03.06
	S1	UNAUTHORIZED VEHICLES SIGN: CODE UPDATE 2/L03.05 QUANTITY: 2
	S2	ACCESSIBLE ROUTE SIGN 3/L03.05 QUANTITY: 1
	S3	REGULATORY SIGN - NO DOGS 4/L03.05 QUANTITY: 1
	S4	FLYING BALLS AND BATS WARNING SIGN 5/L03.05 QUANTITY: 2
	S5	SAFE DISPERSAL AREA SIGN 6/L03.05 QUANTITY: 1
	S6	SERVICE ROAD ONLY SIGN 7/L03.05 QUANTITY: 2
		RAILS
	GR	GUARD RAIL 2/L03.03
	BR	BARRIER RAIL 4/L03.03
		WALLS/SEATWALLS
═══		CONCRETE RETAINING WALL 1/L03.03 1/S4.1
		LANDSCAPE UTILITIES
▨		DRAINAGE INLET RENOVATIONS 3/L03.01
		SPORTS EQUIPMENT/ SITE FURNISHING SERIES
□ ▽ ▭	SF1	HOME PLATE & BASES W/ GROUND ANCHORS & PITCHER'S PLATE (VIA CMAS CONTRACT) 4/L03.02 5/L03.02 6/L03.02
		CONCRETE PAVING SERIES
▦	C1	CONCRETE PAVING TYPE C1: PEDESTRIAN RATED 1/L03.00 COLOR: NATURAL W/ LAMP BLACK FINISH: MEDIUM BROOM FINISH

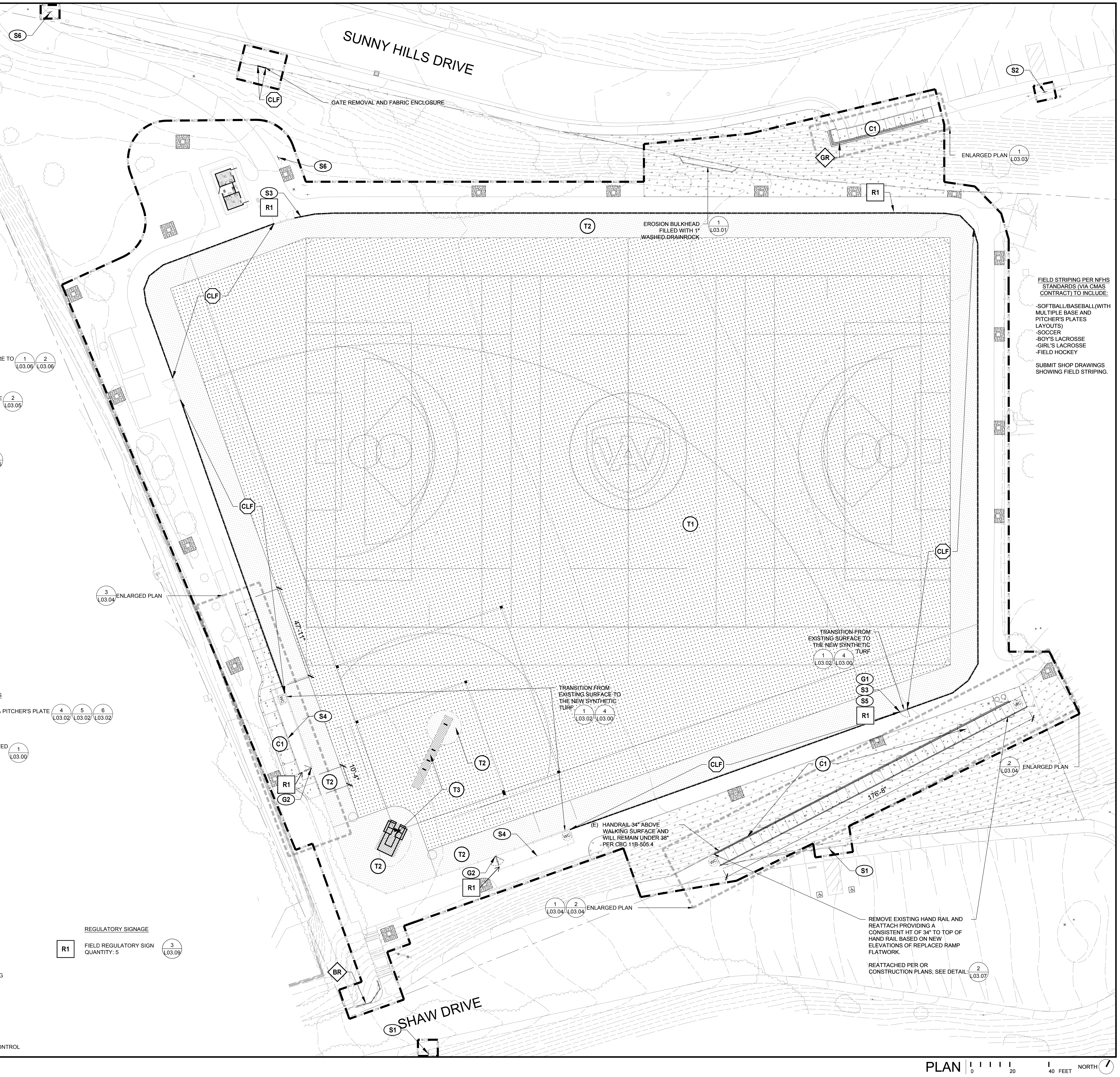
CONCRETE CONTROL JOINT SERIES

- CONCRETE PAVING
- EXPANSION JOINT (EJ)
- CONTROL JOINTS (CJ)
- EDGE OF PAVING

SYMBOL	KEY	DESCRIPTION	
		SYNTHETIC TURF (VIA CMAS CONTRACT)	
▨	T1	CARPET: VERTEX INFILL: CORK & SAND COLOR: GREEN	2.6 TOTAL ACRES OF RESURFACING
▨	T2	CARPET: VINTAGE INFILL: OLIVE PIT & SAND COLOR: RUST	
▩	T3	TOUGH BACK AREAS COLOR: RUST	
		PLANTING	
▨		FLAIL MOW AND HYDROSEED FOR EROSION CONTROL	

REGULATORY SIGNAGE

KEY	DESCRIPTION
R1	FIELD REGULATORY SIGN 3/L03.09 QUANTITY: 5



EROSION BULKHEAD FILLED WITH 1" WASHED DRAINROCK 1/L03.01

FIELD STRIPING PER NFHS STANDARDS (VIA CMAS CONTRACT) TO INCLUDE:

-SOFTBALL/BASEBALL(WITH MULTIPLE BASE AND PITCHER'S PLATES LAYOUTS)
-SOCCER
-BOY'S LACROSSE
-GIRL'S LACROSSE
-FIELD HOCKEY

SUBMIT SHOP DRAWINGS SHOWING FIELD STRIPING.

TRANSITION FROM EXISTING SURFACE TO THE NEW SYNTHETIC TURF 1/L03.02 4/L03.00

TRANSITION FROM EXISTING SURFACE TO THE NEW SYNTHETIC TURF 1/L03.02 4/L03.00

(E) HANDRAIL 34" ABOVE WALKING SURFACE AND WILL REMAIN UNDER 38" PER CBC 11B-505.4

REMOVE EXISTING HAND RAIL AND REATTACH PROVIDING A CONSISTENT HT OF 34" TO TOP OF HAND RAIL BASED ON NEW ELEVATIONS OF REPLACED RAMP FLATWORK.

REATTACHED PER OR CONSTRUCTION PLANS; SEE DETAIL: 2/L03.07

Know what's below. Call 811 before you dig.

Peter Stanley 2/17/2023 4:51 PM

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DIV. OF THE STATE ARCHITECT
APP: 01-120489 INC:
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DATE: 3/20/2022

ARCHITECT/ ENGINEER

ZFA STRUCTURAL ENGINEERS
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www.carducciassociates.com

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STAMP

WILLIAM E. FEE
2537
12.31.2024
02.17.2023

OWNER

TAMALPAIS UNION
HIGH SCHOOL
DISTRICT

PROJECT

RED HILL
COMMUNITY
SPORTS PARK
RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

DSA SUBMITTAL

FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE:	02.17.2023
SCALE:	AS SHOWN
PROJECT NO:	TAM22-01

SHEET TITILE

MATERIALS LEGEND
& PLAN

SHEET NUMBER

L02.00

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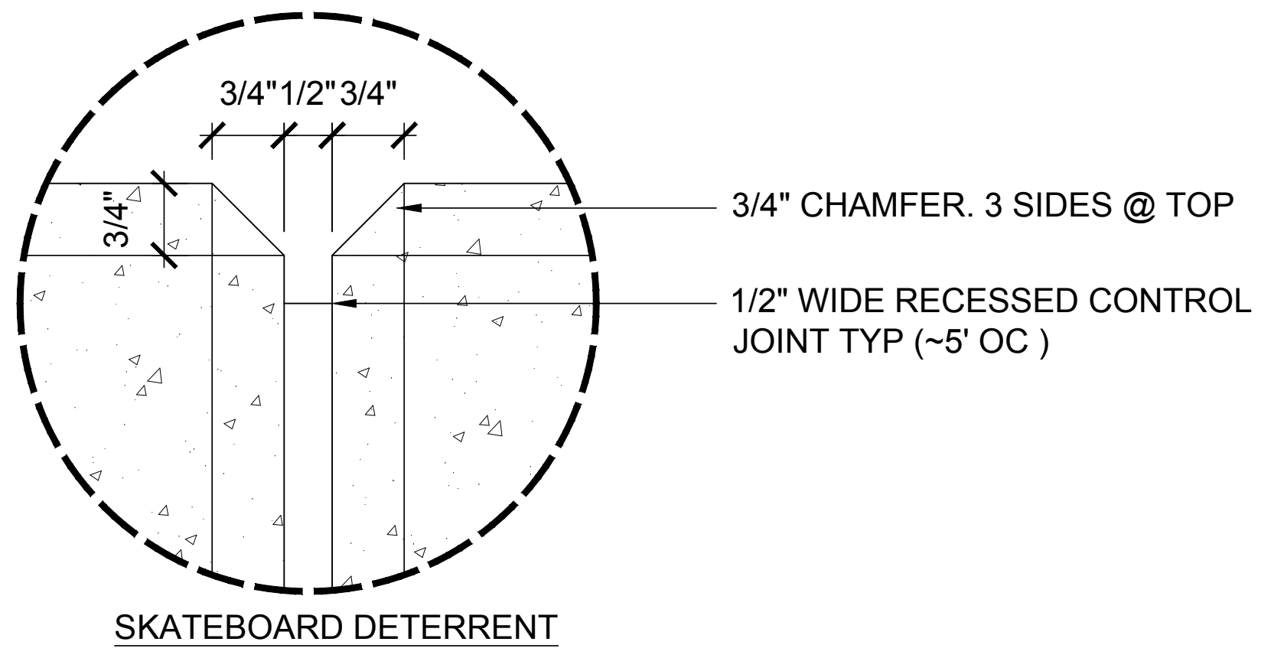
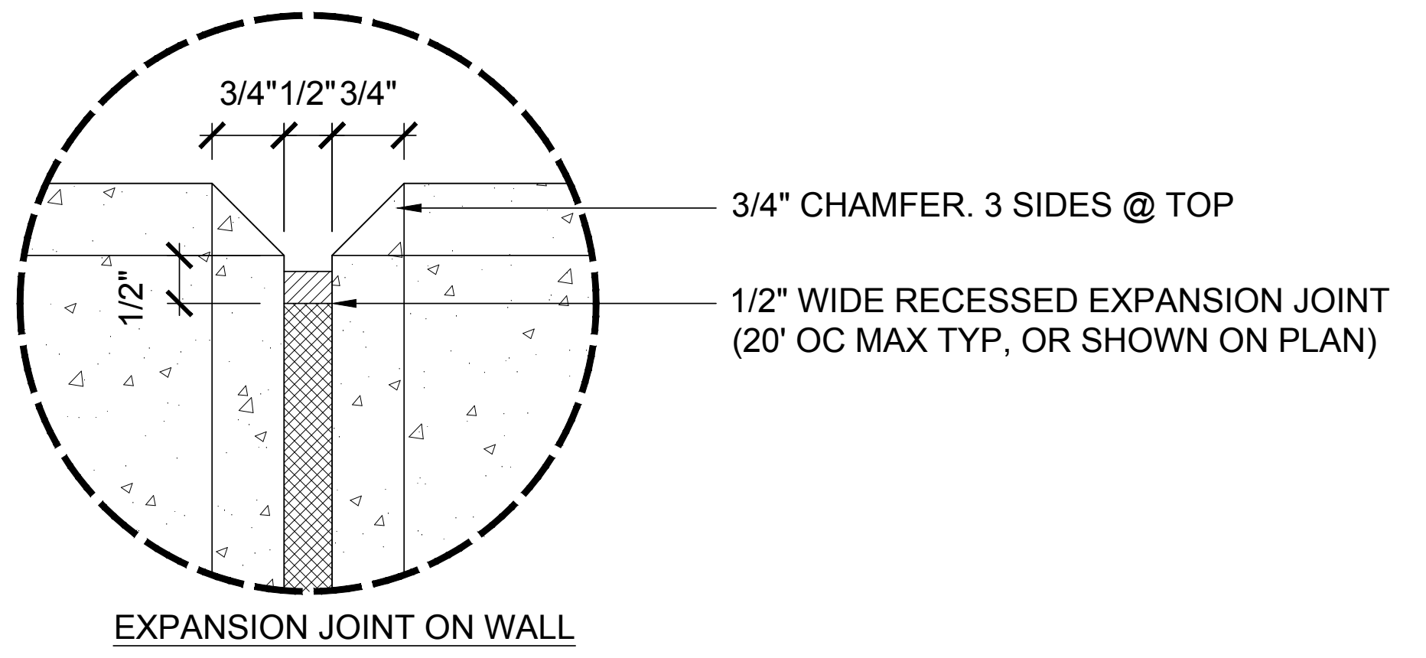

3/4"1/2"3/4"
3/4"
3/4" CHAMFER. 3 SIDES @ TOP
1/2" WIDE RECESSED CONTROL
JOINT TYP (~5' OC)

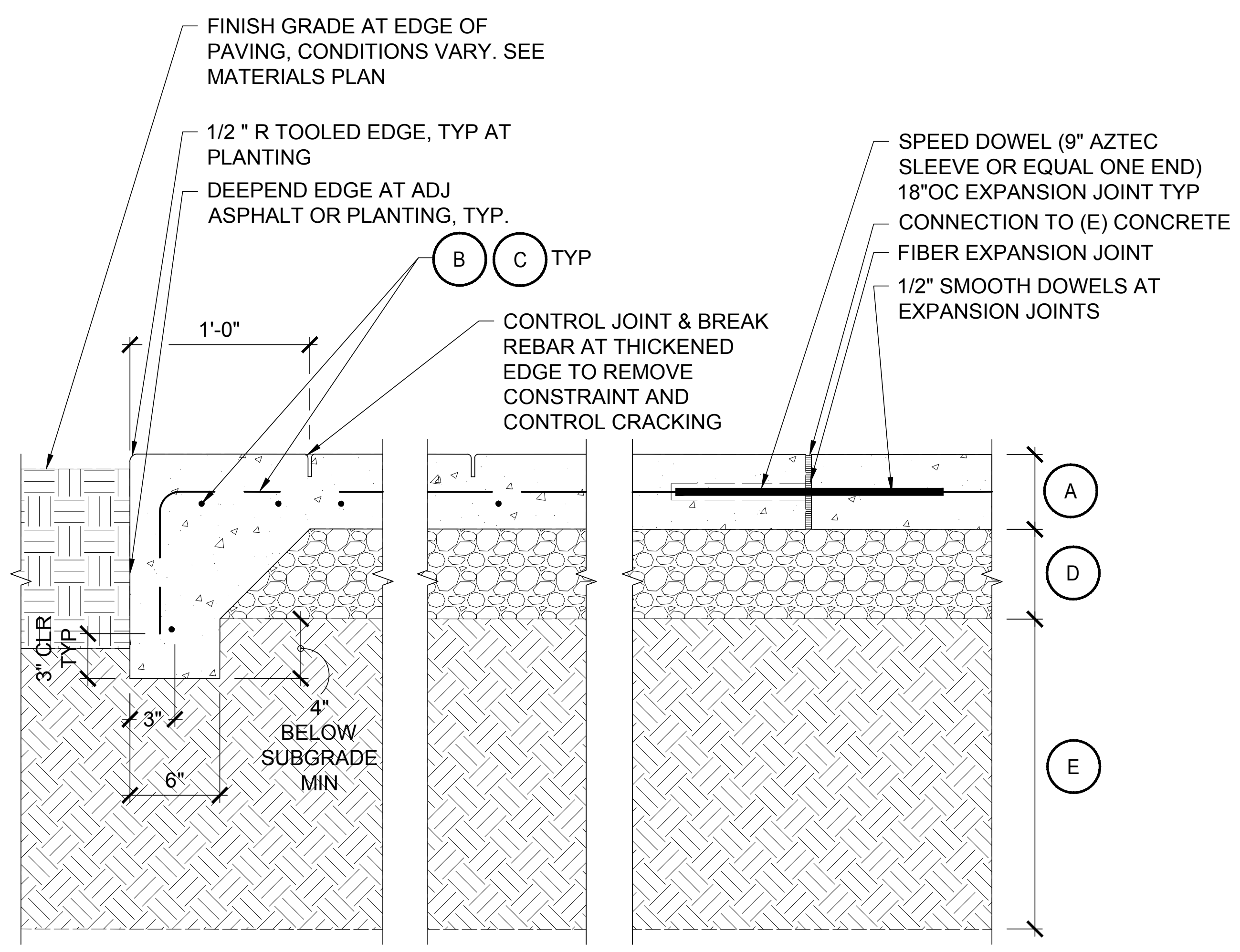
SKATEBOARD DETERRENT


3/4"1/2"3/4"
1/2"
3/4" CHAMFER. 3 SIDES @ TOP
1/2" WIDE RECESSED EXPANSION JOINT
(20' OC MAX TYP, OR SHOWN ON PLAN)

EXPANSION JOINT ON WALL

3 CONCRETE WALL JOINTS

SCALE: 6" = 1'

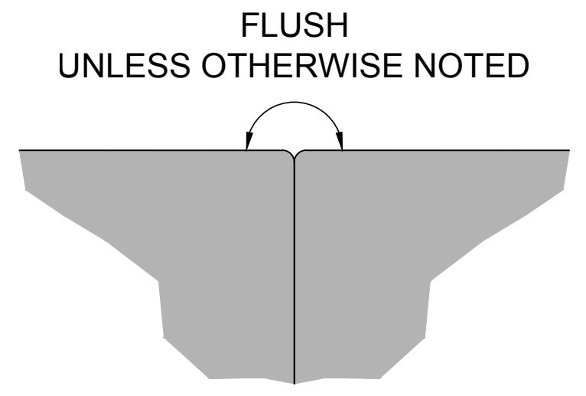

FINISH GRADE AT EDGE OF
PAVING, CONDITIONS VARY. SEE
MATERIALS PLAN
1/2 " R TOOLED EDGE, TYP AT
PLANTING
DEEPEND EDGE AT ADJ
ASPHALT OR PLANTING, TYP.
B
C
TYP
1'-0"
CONTROL JOINT & BREAK
REBAR AT THICKENED
EDGE TO REMOVE
CONSTRAINT AND
CONTROL CRACKING
SPEED DOWEL (9" AZTEC
SLEEVE OR EQUAL ONE END)
18"OC EXPANSION JOINT TYP
CONNECTION TO (E) CONCRETE
FIBER EXPANSION JOINT
1/2" SMOOTH DOWELS AT
EXPANSION JOINTS
A
D
E
3" CLR
TYP
3"
6"
4"
BELOW
SUBGRADE
MIN

NOTE:
1. FINISH MEDIUM BROOM NONSLIP PERPENDICULAR TO ACCESSIBLE ROUTE UNLESS OTHERWISE NOTED, SEE MATERIALS PLANS FOR COLOR, UNLESS OTHERWISE NOTED.
2. SCORE JOINTS SHALL BE PLACED A MAX OF 5' OC OR AS SHOWN ON PLANS.
3. EJ'S SHALL BE PLACED A MAX OF 20' OC TYP, OR AS SHOWN ON PLANS.
4. 2% MAX CROSS SLOPE IN ALL AREAS WITHIN ACCESSIBLE ROUTE. IF FIELD CONDITIONS CREATE MORE THAN 2% CROSS SLOPE DO NOT PLACE CONCRETE WITH OUT APPROVAL BY INSPECTOR & LANDSCAPE ARCHITECT.
5. PROVIDE ON SITE 5' WIDE MOCK-UP OF PAVING AND JOINTS FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

		C1 - PEDESTRIAN CONCRETE PAVING
A	CAST-IN-PLACE CONCRETE THICKNESS	5"
B	REBAR	#4
C	REBAR SPACING	18" EACH WAY, CENTERED & SLAB
D	92% COMPACTED CLASS II AGG. BASE	0'-6"
E	COMPACTED SUBGRADE	12" DEPTH MIN/ 90% RC

1 PAVING - CONCRETE TYPE C1

SCALE: 1 1/2" = 1'

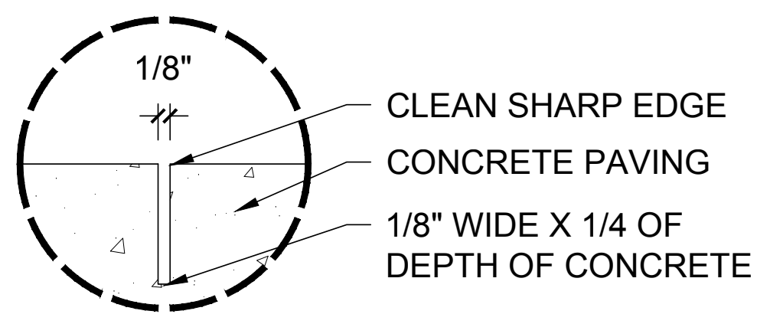

FLUSH
UNLESS OTHERWISE NOTED

ACCESSIBLE ROUTE & PEDESTRIAN SURFACE TRANSITION

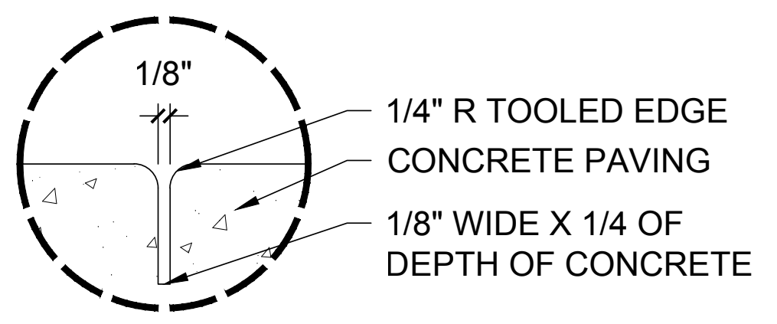
NOTES:
1. SURFACE TRANSITION AT ACCESSIBLE ROUTE AS INDICATED ON ARCHITECTURAL DRAWINGS IS A BARRIER FREE ACCESS ROUTE WILL NOT HAVE ANY ABRUPT VERTICAL CHANGES EXCEEDING 1/4" MAXIMUM. VERTICAL CHANGE BETWEEN 1/4" & 1/2" REQUIRE A BEVELED EDGE 1:2 MAXIMUM.
2. SURFACE TRANSITION AT ALL PEDESTRIAN SURFACES WILL NOT HAVE ANY ABRUPT VERTICAL CHANGES EXCEEDING 1/2" MAXIMUM. VERTICAL CHANGE BETWEEN 1/4" & 1/2" REQUIRE A BEVELED EDGE 1:2 MAXIMUM.
3. REFER TO MATERIALS PLANS FOR ADDITION INFORMATION.

4 SURFACE TRANSITION DETAIL

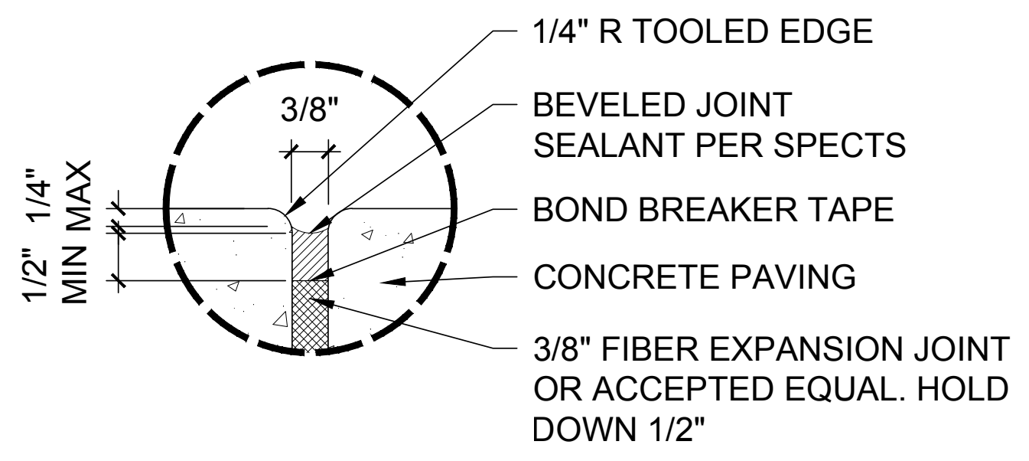
SCALE: 3" = 1'


1/8"
CLEAN SHARP EDGE
CONCRETE PAVING
1/8" WIDE X 1/4 OF
DEPTH OF CONCRETE

CONTROL JOINT: SAW CUT (SJ1)


1/8"
1/4" R TOOLED EDGE
CONCRETE PAVING
1/8" WIDE X 1/4 OF
DEPTH OF CONCRETE

CONTROL JOINT: TOOLED (TJ)


1/4" R TOOLED EDGE
BEVELED JOINT
SEALANT PER SPECTS
BOND BREAKER TAPE
CONCRETE PAVING
3/8" FIBER EXPANSION JOINT
OR ACCEPTED EQUAL. HOLD
DOWN 1/2"
3/8"
1/2" MIN
1/4" MAX

FIBER EXPANSION JOINT (EJ)

NOTES:
1. MOCK UP JOINTS WITH CONC PAVING MOCKUP FOR REVIEW AND ACCEPTANCE.

2 PAVING - CONCRETE JOINTS

SCALE: 6" = 1'

Peter Stanley 2/17/2023 4:51 PM

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DATE: 3/20/2022

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2537
Signature
12.31.2024
Renewal Date
02.17.2023
Date

OWNER
TAMALPAIS UNION
HIGH SCHOOL
DISTRICT

PROJECT
RED HILL
COMMUNITY
SPORTS PARK
RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

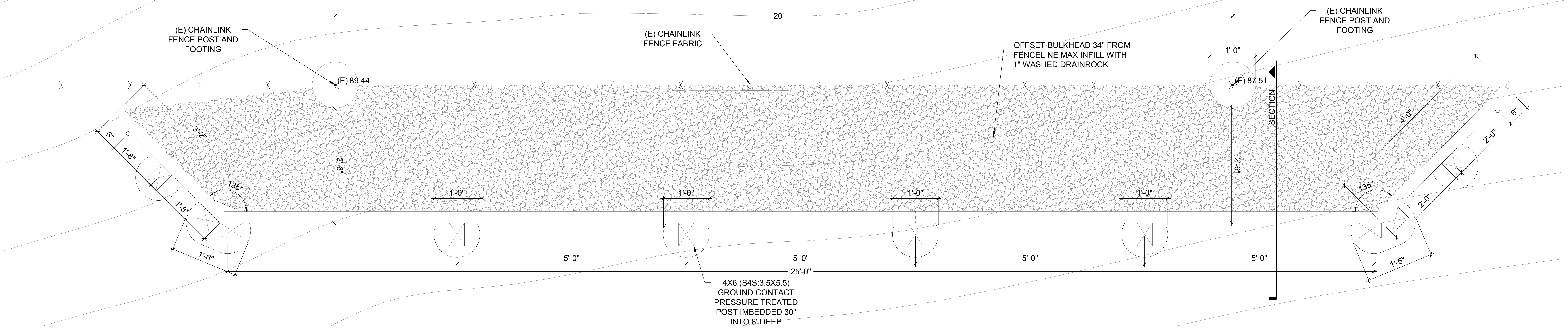
DSA SUBMITTAL

FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE: 02.17.2023
SCALE: AS SHOWN
PROJECT NO: TAM22-01

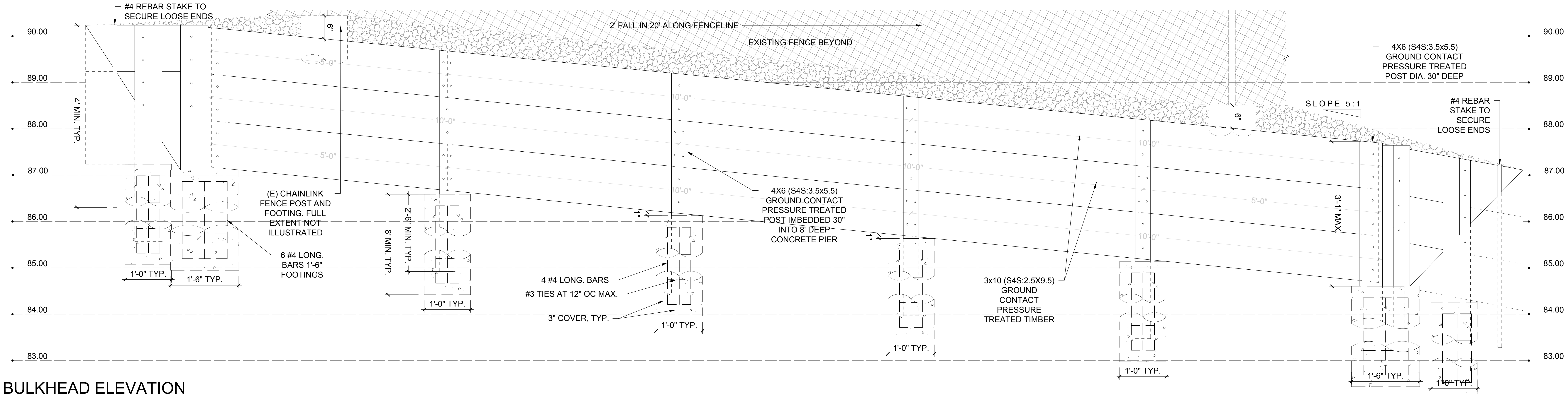
SHEET TITILE
DETAILS - CONCRETE

SHEET NUMBER
L03.00


(E) CHAINLINK FENCE POST AND FOOTING
20'
(E) CHAINLINK FENCE FABRIC
OFFSET BULKHEAD 34" FROM FENCELINE MAX INFILL WITH 1" WASHED DRAINROCK
(E) CHAINLINK FENCE POST AND FOOTING
1'-0"
(E) 89.44
(E) 87.51
SECTION
3'-2"
6"
1'-8"
1'-8"
135°
1'-6"
2'-6"
2'-6"
1'-0"
1'-0"
1'-0"
1'-0"
4'-0"
6"
2'-0"
2'-0"
135°
1'-6"
5'-0"
5'-0"
5'-0"
25'-0"
4X6 (S4S:3.5X5.5) GROUND CONTACT PRESSURE TREATED POST IMBEDDED 30" INTO 8' DEEP

1 BULKHEAD PLAN ENLARGEMENT

SCALE: 1" = 1'

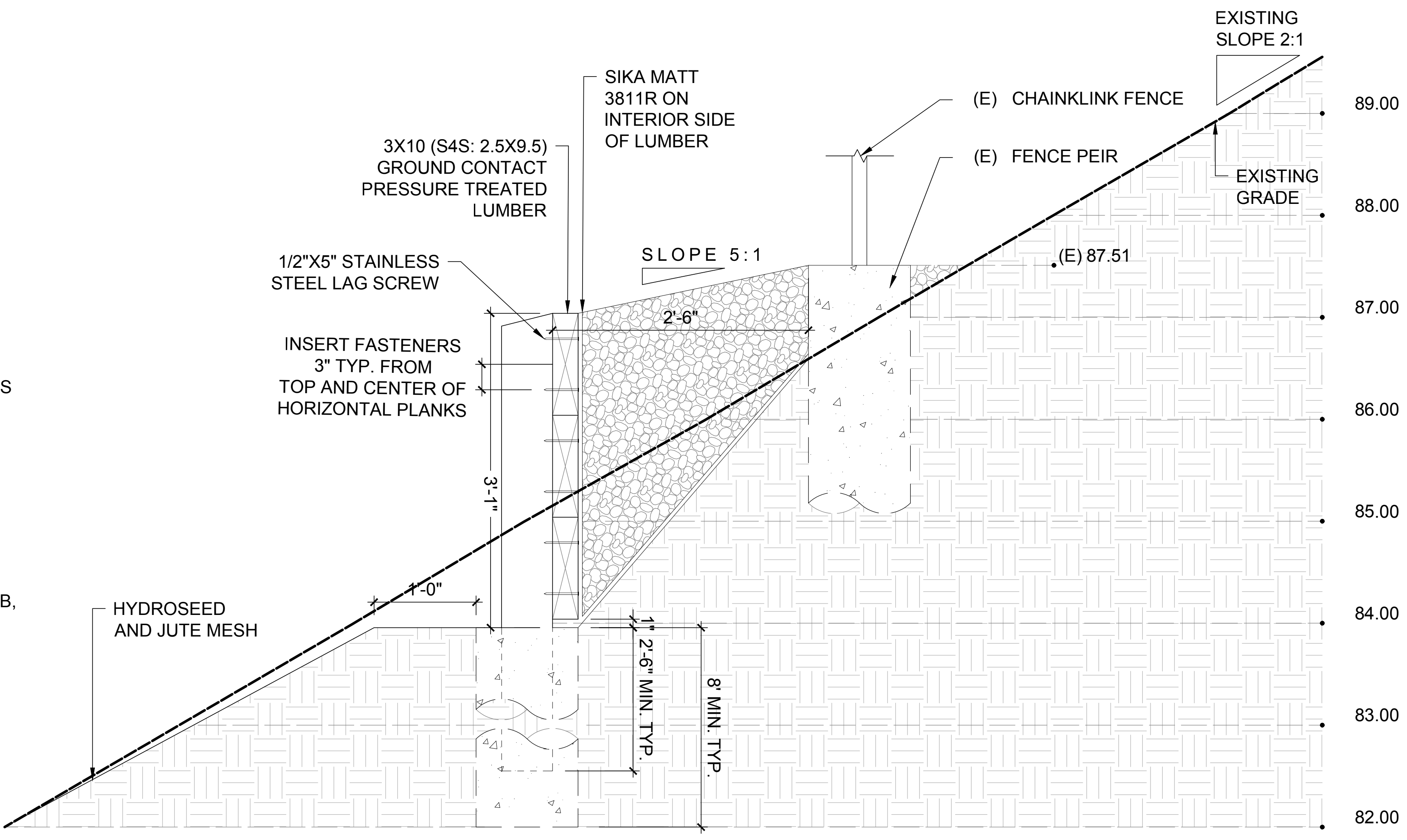

#4 REBAR STAKE TO SECURE LOOSE ENDS
2' FALL IN 20' ALONG FENCELINE
EXISTING FENCE BEYOND
6"
6"
4' MIN. TYP.
5'-0"
10'-0"
10'-0"
10'-0"
10'-0"
5'-0"
(E) CHAINLINK FENCE POST AND FOOTING. FULL EXTENT NOT ILLUSTRATED
6 #4 LONG. BARS 1'-6" FOOTINGS
1'-0" TYP.
1'-6" TYP.
2'-6" MIN. TYP.
8' MIN. TYP.
1'-0" TYP.
4 #4 LONG. BARS
#3 TIES AT 12" OC MAX.
3" COVER, TYP.
1'-0" TYP.
1"
1"
4X6 (S4S:3.5x5.5) GROUND CONTACT PRESSURE TREATED POST IMBEDDED 30" INTO 8' DEEP CONCRETE PIER
3x10 (S4S:2.5X9.5) GROUND CONTACT PRESSURE TREATED TIMBER
1'-0" TYP.
1'-0" TYP.
4X6 (S4S:3.5x5.5) GROUND CONTACT PRESSURE TREATED POST DIA. 30" DEEP
SLOPE 5:1
#4 REBAR STAKE TO SECURE LOOSE ENDS
3'-1" MAX.
1'-6" TYP.
1'-0" TYP.
90.00
89.00
88.00
87.00
86.00
85.00
84.00
83.00

2 BULKHEAD ELEVATION

SCALE: 1" = 1'

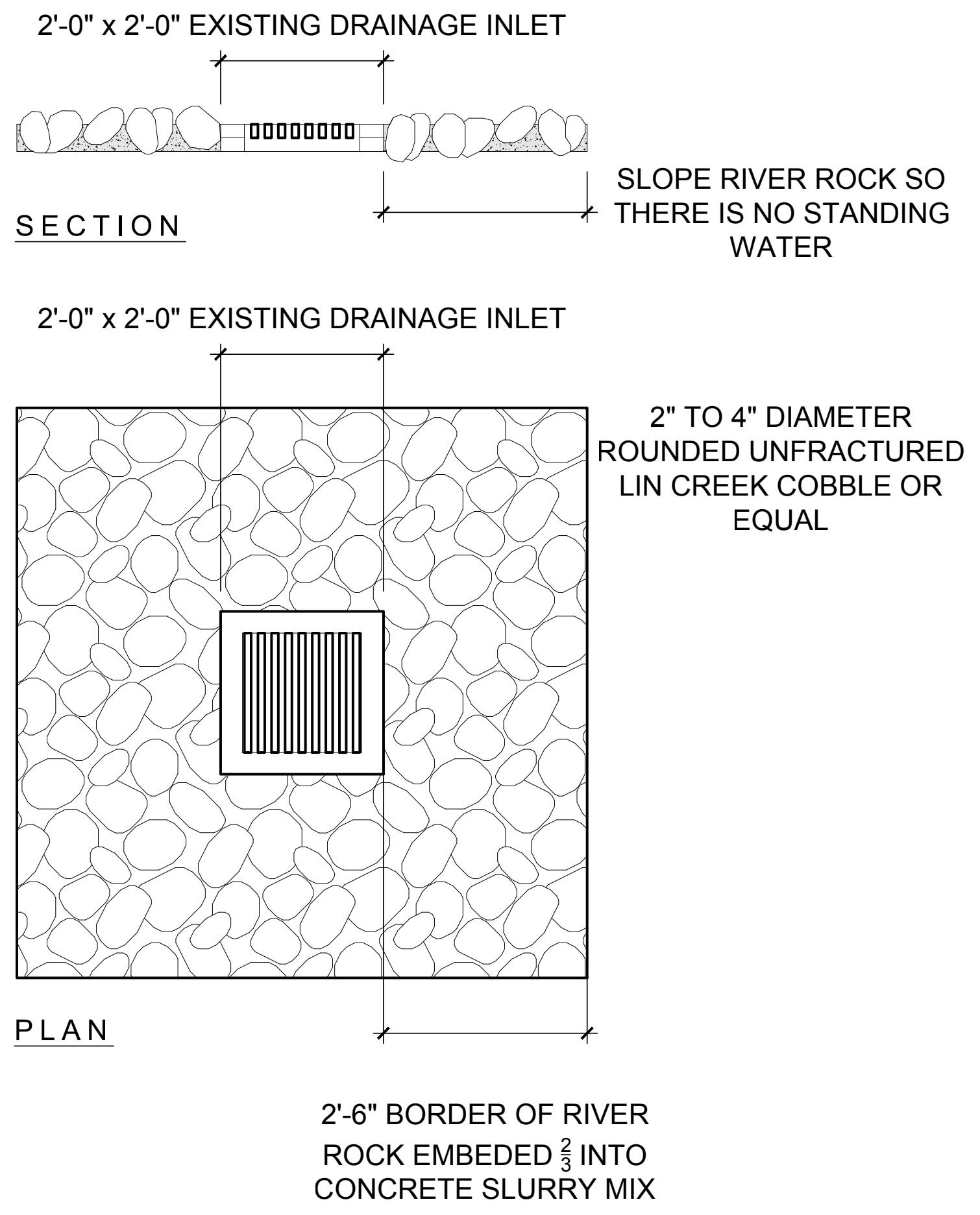
NOTES:

1. BOARDS AND LUMBER: PRESSURE TREATED DOUGLAS FIR, S4S, NATURAL FINISH
2. FASTENERS: HOT DIPPED GALVINIZED SELF TAPPING SCREWS
3. SIKA MAT 33811R GEO-COMPOSITE MEMBRANE
4. SET POST SQUARE AND PLUMB, SLOPE TIMBER AS REQUIRED
5. EASE ALL EXPOSED EDGES
6. SOIL BACKFILL: 1" DIAMETER WASHED DRAINROCK
7. REFER TO STRUCTURAL DRAWINGS FOR PSI OF CONCRETE


SIKA MATT 3811R ON INTERIOR SIDE OF LUMBER
3X10 (S4S: 2.5X9.5) GROUND CONTACT PRESSURE TREATED LUMBER
1/2"X5" STAINLESS STEEL LAG SCREW
INSERT FASTENERS 3" TYP. FROM TOP AND CENTER OF HORIZONTAL PLANKS
SLOPE 5:1
2'-6"
3'-1"
1'-0"
HYDROSEED AND JUTE MESH
1"
2'-6" MIN. TYP.
8' MIN. TYP.
(E) CHAINLINK FENCE
(E) FENCE PEIR
(E) 87.51
EXISTING SLOPE 2:1
EXISTING GRADE
89.00
88.00
87.00
86.00
85.00
84.00
83.00
82.00

4 BULKHEAD SECTION

SCALE: 1" = 1'


2'-0" x 2'-0" EXISTING DRAINAGE INLET
SECTION
SLOPE RIVER ROCK SO THERE IS NO STANDING WATER
2'-0" x 2'-0" EXISTING DRAINAGE INLET
2" TO 4" DIAMETER ROUNDED UNFRACTURED LIN CREEK COBBLE OR EQUAL
PLAN
2'-6" BORDER OF RIVER ROCK EMBEDED $\frac{2}{3}$ INTO CONCRETE SLURRY MIX

3 DRAINAGE INLET PROTECTION

SCALE: 1/2" = 1'

Peter Stanley 2/17/2023 4:51 PM

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WILLIAM E. FEE
2537
Bill Fee
Signature
12.31.2024
Renewal Date
02.17.2023
Date

OWNER

TAMALPAIS UNION HIGH SCHOOL DISTRICT

PROJECT

RED HILL COMMUNITY SPORTS PARK RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

DSA SUBMITTAL

FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

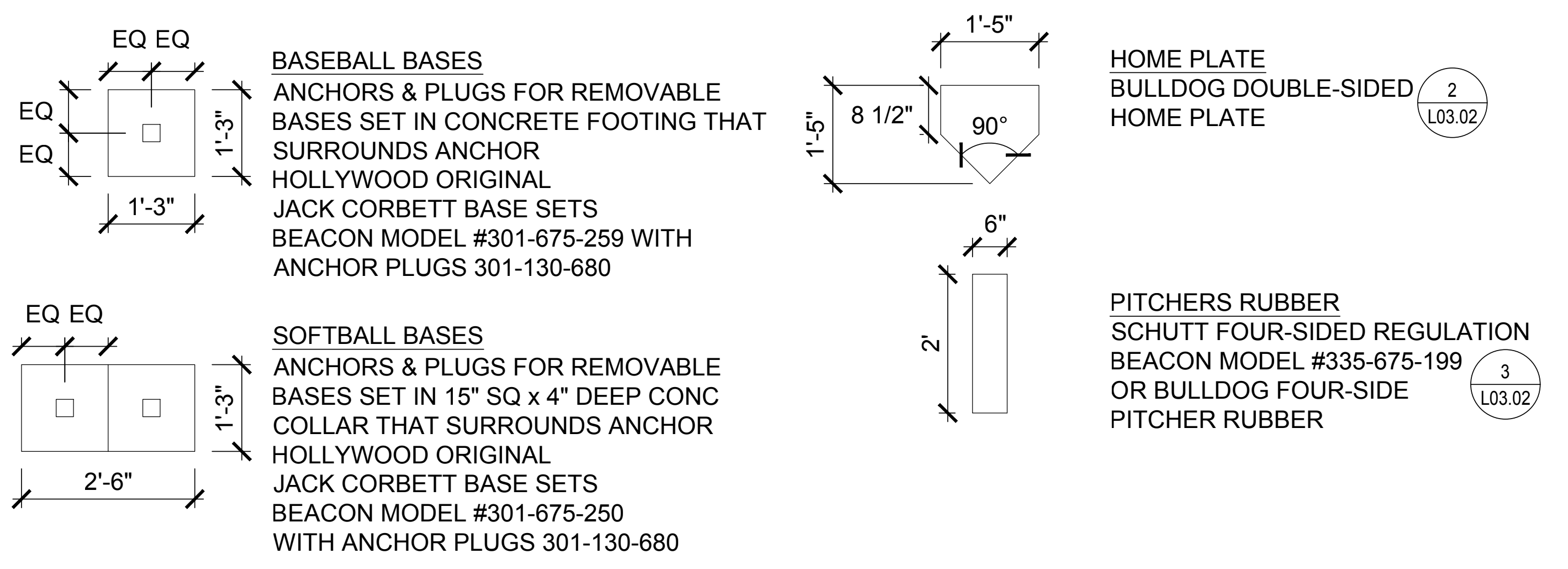
DATE: 02.17.2023
SCALE: AS SHOWN
PROJECT NO: TAM22-01

SHEET TITLE

DETAILS - BULKHEAD AND DRAINAGE

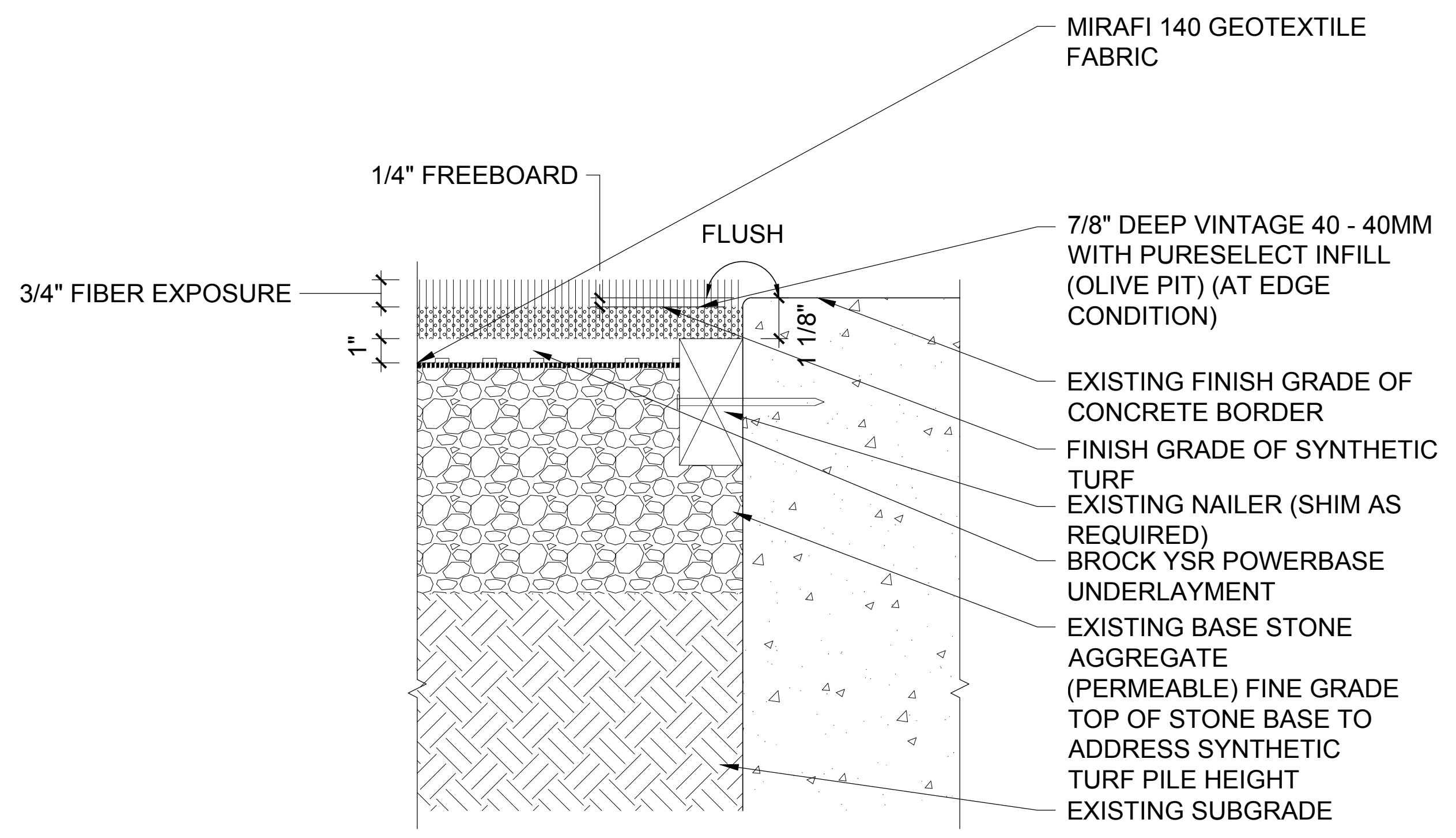
SHEET NUMBER

L03.01


EQ EQ
EQ
EQ
1'-3"
1'-3"
BASEBALL BASES
ANCHORS & PLUGS FOR REMOVABLE
BASES SET IN CONCRETE FOOTING THAT
SURROUNDS ANCHOR
HOLLYWOOD ORIGINAL
JACK CORBETT BASE SETS
BEACON MODEL #301-675-259 WITH
ANCHOR PLUGS 301-130-680
EQ EQ
1'-3"
2'-6"
SOFTBALL BASES
ANCHORS & PLUGS FOR REMOVABLE
BASES SET IN 15" SQ x 4" DEEP CONC
COLLAR THAT SURROUNDS ANCHOR
HOLLYWOOD ORIGINAL
JACK CORBETT BASE SETS
BEACON MODEL #301-675-250
WITH ANCHOR PLUGS 301-130-680
1'-5"
1'-5"
8 1/2"
90°
HOME PLATE
BULLDOG DOUBLE-SIDED
HOME PLATE
2
L03.02
6"
2'
PITCHERS RUBBER
SCHUTT FOUR-SIDED REGULATION
BEACON MODEL #335-675-199
OR BULLDOG FOUR-SIDE
PITCHER RUBBER
3
L03.02

6 PITCHING RUBBER AND BASES

SCALE: 1/2" = 1'


MIRAFI 140 GEOTEXTILE FABRIC
1/4" FREEBOARD
FLUSH
3/4" FIBER EXPOSURE
1"
1 1/8"
7/8" DEEP VINTAGE 40 - 40MM WITH PURESELECT INFILL (OLIVE PIT) (AT EDGE CONDITION)
EXISTING FINISH GRADE OF CONCRETE BORDER
FINISH GRADE OF SYNTHETIC TURF
EXISTING NAILER (SHIM AS REQUIRED)
BROCK YSR POWERBASE UNDERLAYMENT
EXISTING BASE STONE AGGREGATE (PERMEABLE) FINE GRADE TOP OF STONE BASE TO ADDRESS SYNTHETIC TURF PILE HEIGHT
EXISTING SUBGRADE

SECTION AT CONCRETE BORDER

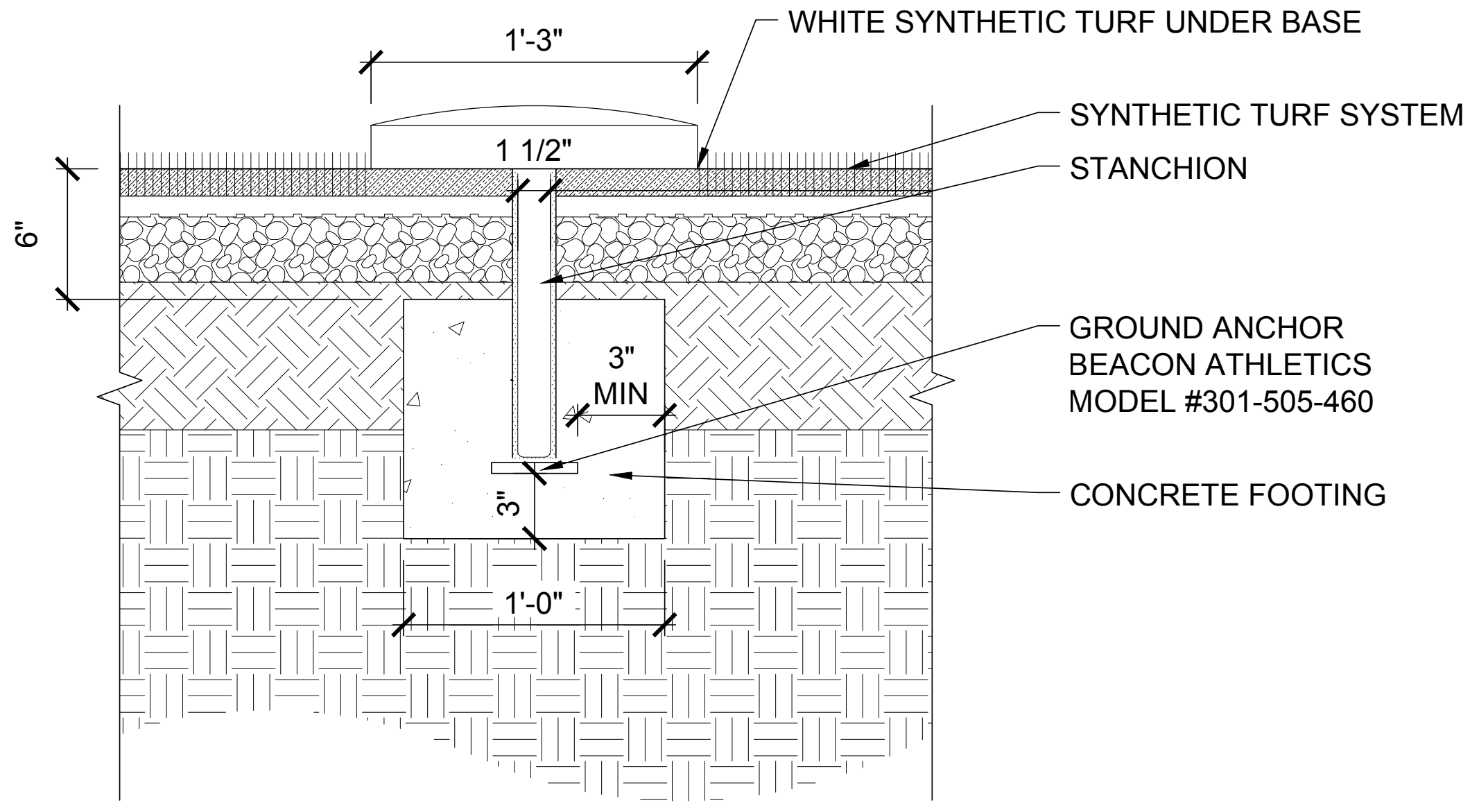
1 SYNTHETIC TURF SYSTEM

SCALE: 3" = 1'

BALL FIELD	TURF PILE HEIGHT	INFILL DEPTH	FIBER EXPOSURE
BASEBALL FIELD			
OUTFIELD	2" (50mm)	1.25"	0.75"
INFIELD & WARNING TRACK	1.625" (40mm)	0.875"	0.75"
DIFFERENCE	0.375" (3/8")	0.375" (3/8")	0.0"

NOTES

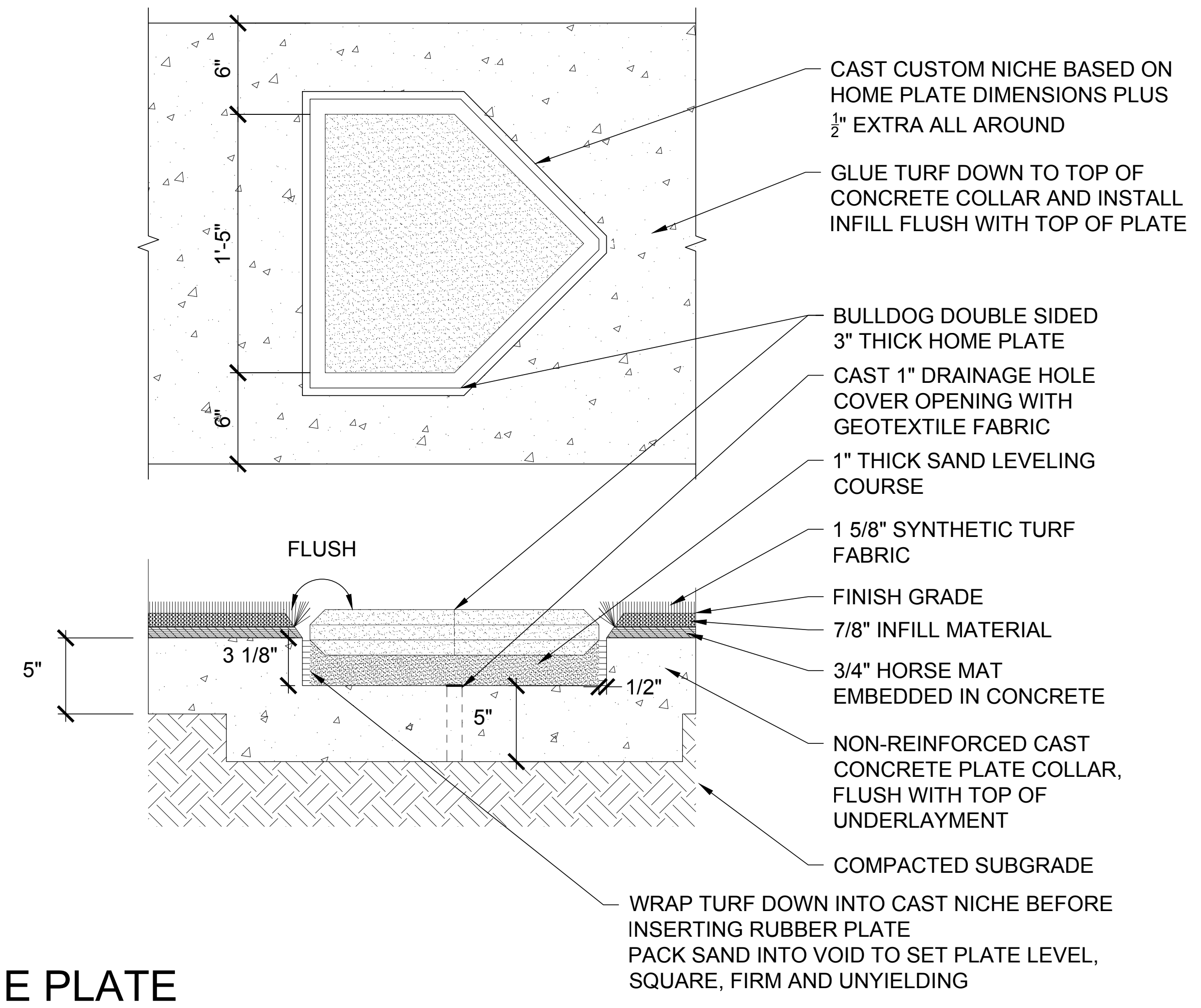
1. WHERE 40MM AND 50MM CARPETS MEET AT SEAMS, SET BOTTOM OF 40MM CARPET & BOTTOM OF 50MM FLUSH WITH EACH OTHER. TURF INSTALLER WILL "FEATHER" THE FINISHED GRADE OF INFILL AT THESE SEAMS TO PROVIDE A SMOOTH SURFACE.
2. SET TOP OF PLASTIC NAILER 1.125" (1-1/8") BELOW TOP OF CONCRETE BORDER.
3. STRING LINE AND CHECK PLANARITY OF BASE ROCK. PROVIDE BASE ACCEPTANCE CERTIFICATION LETTER.


1'-3"
WHITE SYNTHETIC TURF UNDER BASE
1 1/2"
SYNTHETIC TURF SYSTEM
STANCHION
6"
GROUND ANCHOR BEACON ATHLETICS MODEL #301-505-460
3" MIN
3"
CONCRETE FOOTING
1'-0"

NOTE:
1. INSTALLATION TO COMPLY WITH MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS
2. AT BASES, INLAY 1'-3" X 1'-3" WHITE SYNTHETIC TURF TO MARK LOCATION OF BASE. AT DOUBLE FIRST BASE, INCLUDE INLAY 1'-3" X 1'-3" ORANGE SYNTHETIC TURF TO MARK LOCATION OF BASE
3. PROVIDE PLUG FOR GROUND ANCHOR

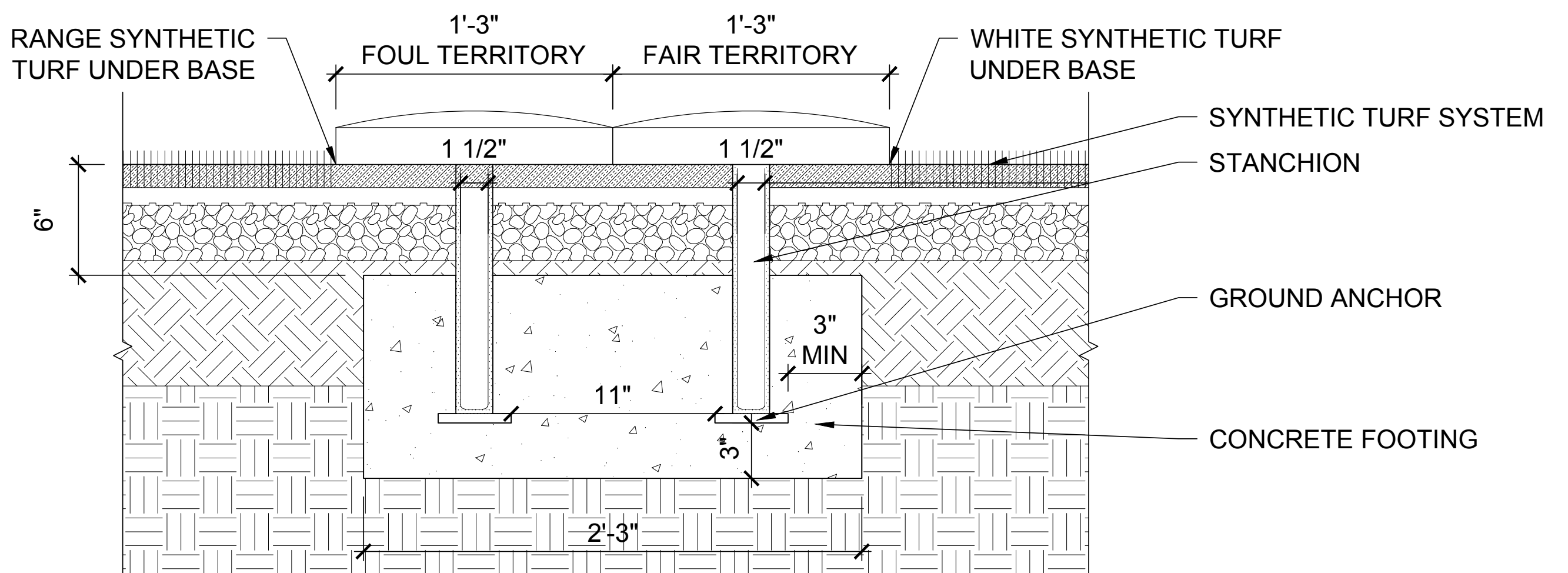
4 BASE ANCHOR

SCALE: 1 1/2" = 1'


6"
1'-5"
6"
CAST CUSTOM NICHE BASED ON HOME PLATE DIMENSIONS PLUS ½" EXTRA ALL AROUND
GLUE TURF DOWN TO TOP OF CONCRETE COLLAR AND INSTALL INFILL FLUSH WITH TOP OF PLATE
BULLDOG DOUBLE SIDED 3" THICK HOME PLATE
CAST 1" DRAINAGE HOLE COVER OPENING WITH GEOTEXTILE FABRIC
1" THICK SAND LEVELING COURSE
1 5/8" SYNTHETIC TURF FABRIC
FLUSH
FINISH GRADE
7/8" INFILL MATERIAL
5"
3 1/8"
3/4" HORSE MAT EMBEDDED IN CONCRETE
1/2"
5"
NON-REINFORCED CAST CONCRETE PLATE COLLAR, FLUSH WITH TOP OF UNDERLAYMENT
COMPACTED SUBGRADE
WRAP TURF DOWN INTO CAST NICHE BEFORE INSERTING RUBBER PLATE
PACK SAND INTO VOID TO SET PLATE LEVEL, SQUARE, FIRM AND UNYIELDING

2 HOME PLATE

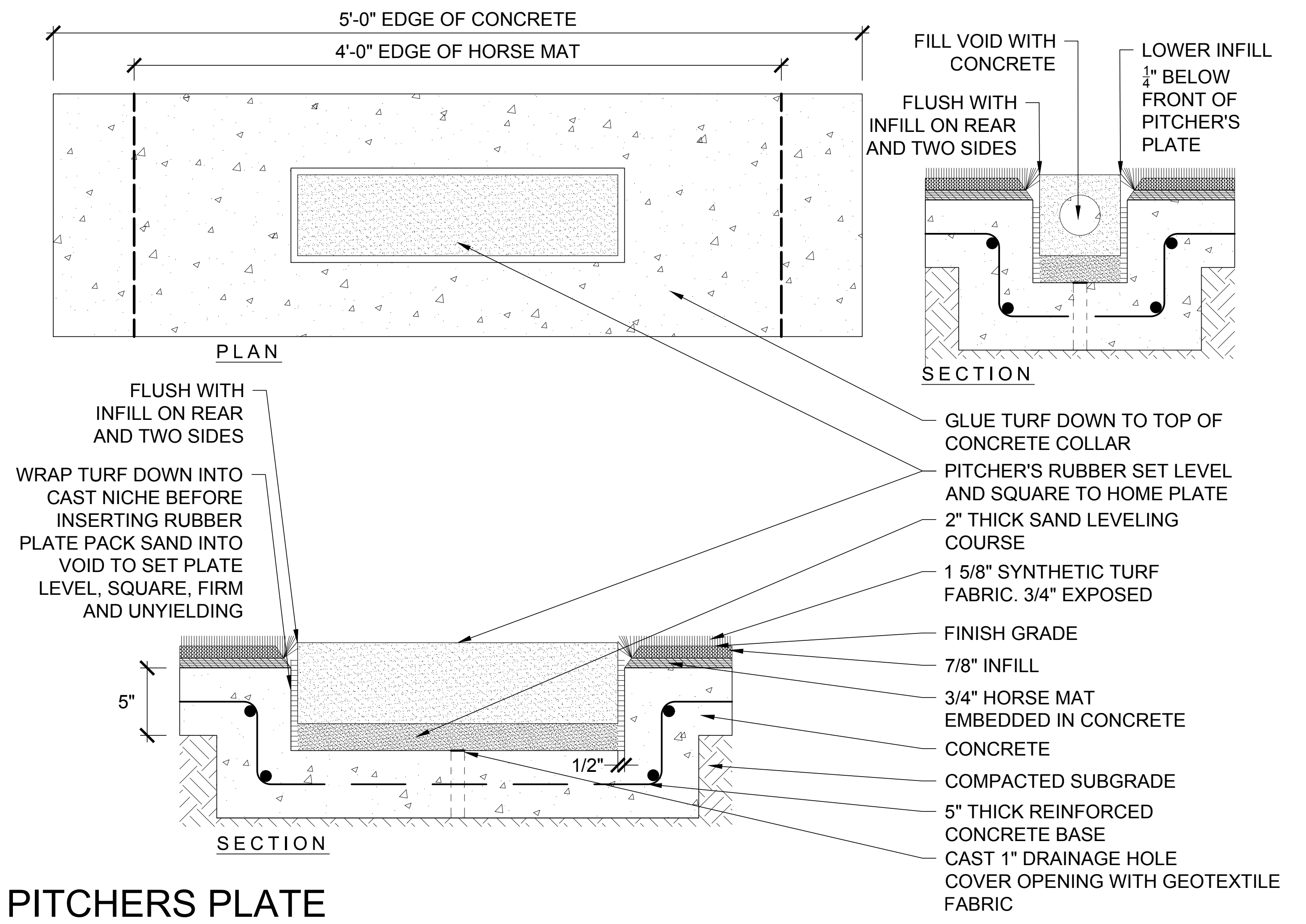
SCALE: 1 1/2" = 1'


RANGE SYNTHETIC TURF UNDER BASE
1'-3" FOUL TERRITORY
1'-3" FAIR TERRITORY
WHITE SYNTHETIC TURF UNDER BASE
1 1/2"
1 1/2"
SYNTHETIC TURF SYSTEM
STANCHION
6"
GROUND ANCHOR
3" MIN
11"
3"
CONCRETE FOOTING
2'-3"

NOTE:
1. INSTALLATION TO COMPLY WITH MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS
2. AT DOUBLE FIRST BASES, INLAY 1'3" X 1'3" WHITE AND ORANGE SYNTHETIC TURF TO MARK LOCATION OF BASE
3. PROVIDE PLUG

5 DOUBLE FIRST BASE ANCHOR

SCALE: 1 1/2" = 1'


5'-0" EDGE OF CONCRETE
4'-0" EDGE OF HORSE MAT
PLAN
FILL VOID WITH CONCRETE
FLUSH WITH INFILL ON REAR AND TWO SIDES
LOWER INFILL ¼" BELOW FRONT OF PITCHER'S PLATE
SECTION
FLUSH WITH INFILL ON REAR AND TWO SIDES
WRAP TURF DOWN INTO CAST NICHE BEFORE INSERTING RUBBER PLATE PACK SAND INTO VOID TO SET PLATE LEVEL, SQUARE, FIRM AND UNYIELDING
GLUE TURF DOWN TO TOP OF CONCRETE COLLAR
PITCHER'S RUBBER SET LEVEL AND SQUARE TO HOME PLATE
2" THICK SAND LEVELING COURSE
1 5/8" SYNTHETIC TURF FABRIC. 3/4" EXPOSED
FINISH GRADE
7/8" INFILL
3/4" HORSE MAT EMBEDDED IN CONCRETE
CONCRETE
COMPACTED SUBGRADE
5" THICK REINFORCED CONCRETE BASE
CAST 1" DRAINAGE HOLE COVER OPENING WITH GEOTEXTILE FABRIC
5"
1/2"
SECTION

3 PITCHERS PLATE

SCALE: 1 1/2" = 1'

NOTE
WORK ON THIS SHEET VIA CMAS CONTRACT

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APP: 01-120489 INC:
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SS ☑ FLS ☑ ACS ☑
DATE: 3/20/2022

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LICENSED LANDSCAPE ARCHITECT
WILLIAM E. FEE
2537
Bill Fee
Signature
12.31.2024
Renewal Date
02.17.2023
Date

OWNER
TAMALPAIS UNION
HIGH SCHOOL
DISTRICT

PROJECT
RED HILL
COMMUNITY
SPORTS PARK
RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

DSA SUBMITTAL

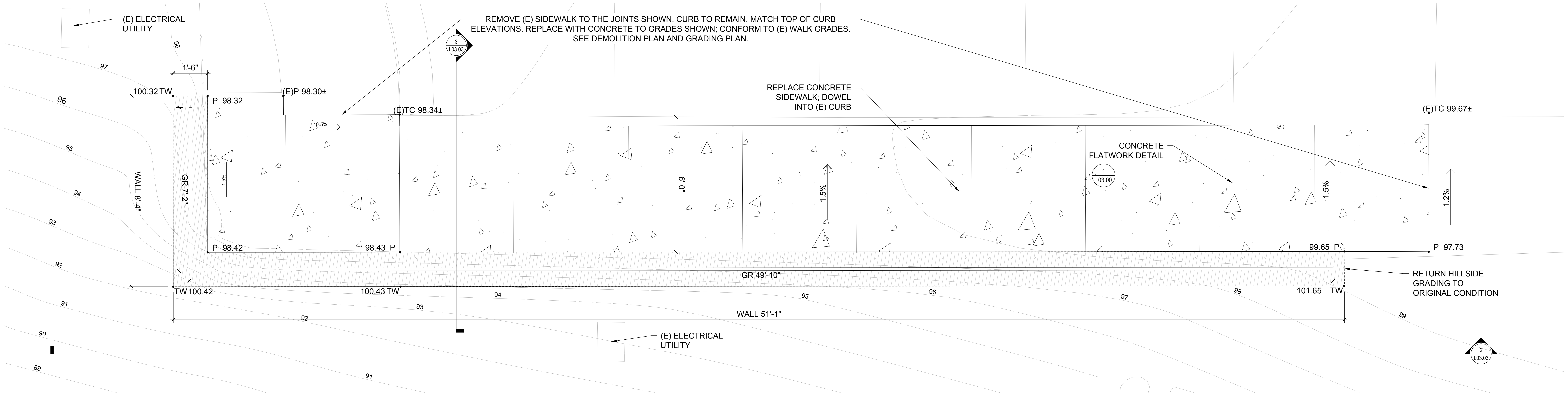
FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE: 02.17.2023
SCALE: AS SHOWN
PROJECT NO: TAM22-01

SHEET TITILE
DETAILS - SYNTHETIC TURF AND BASES

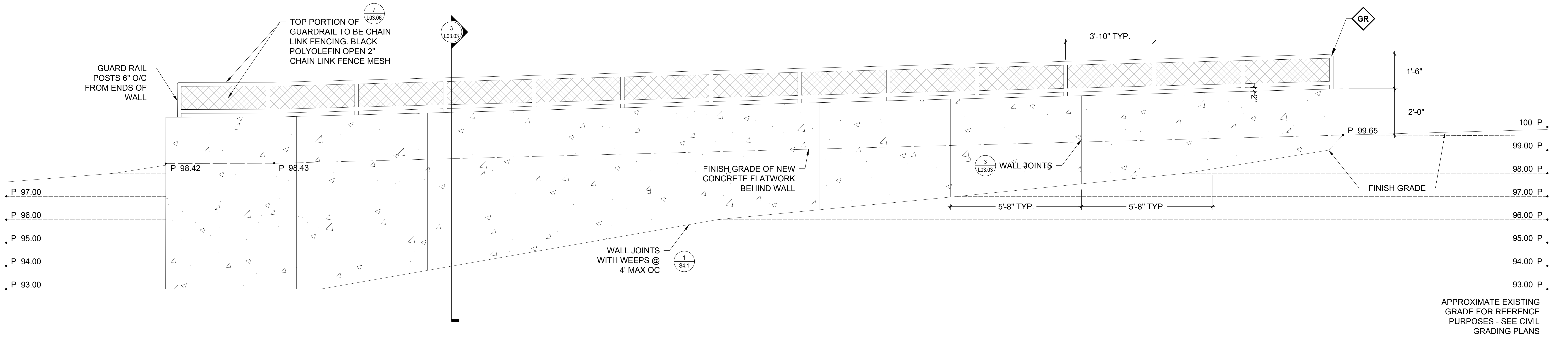
SHEET NUMBER
L03.02

Peter Stanley 2/17/2023 4:51 PM


(E) ELECTRICAL
UTILITY
REMOVE (E) SIDEWALK TO THE JOINTS SHOWN. CURB TO REMAIN, MATCH TOP OF CURB
ELEVATIONS. REPLACE WITH CONCRETE TO GRADES SHOWN; CONFORM TO (E) WALK GRADES.
SEE DEMOLITION PLAN AND GRADING PLAN.
3
L03.03
1'-6"
100.32 TW
P 98.32
(E)P 98.30±
(E)TC 98.34±
0.5%
WALL 8'-4"
GR 7'-2"
1.5%
6'-0"
1.5%
REPLACE CONCRETE
SIDEWALK; DOWEL
INTO (E) CURB
CONCRETE
FLATWORK DETAIL
1
L03.00
1.5%
(E)TC 99.67±
1.2%
P 98.42
98.43 P
99.65 P
P 97.73
GR 49'-10"
TW 100.42
100.43 TW
101.65 TW
RETURN HILLSIDE
GRADING TO
ORIGINAL CONDITION
WALL 51'-1"
(E) ELECTRICAL
UTILITY
2
L03.03
97
96
95
94
93
92
91
90
89
91
92
93
94
95
96
97
98
99
N

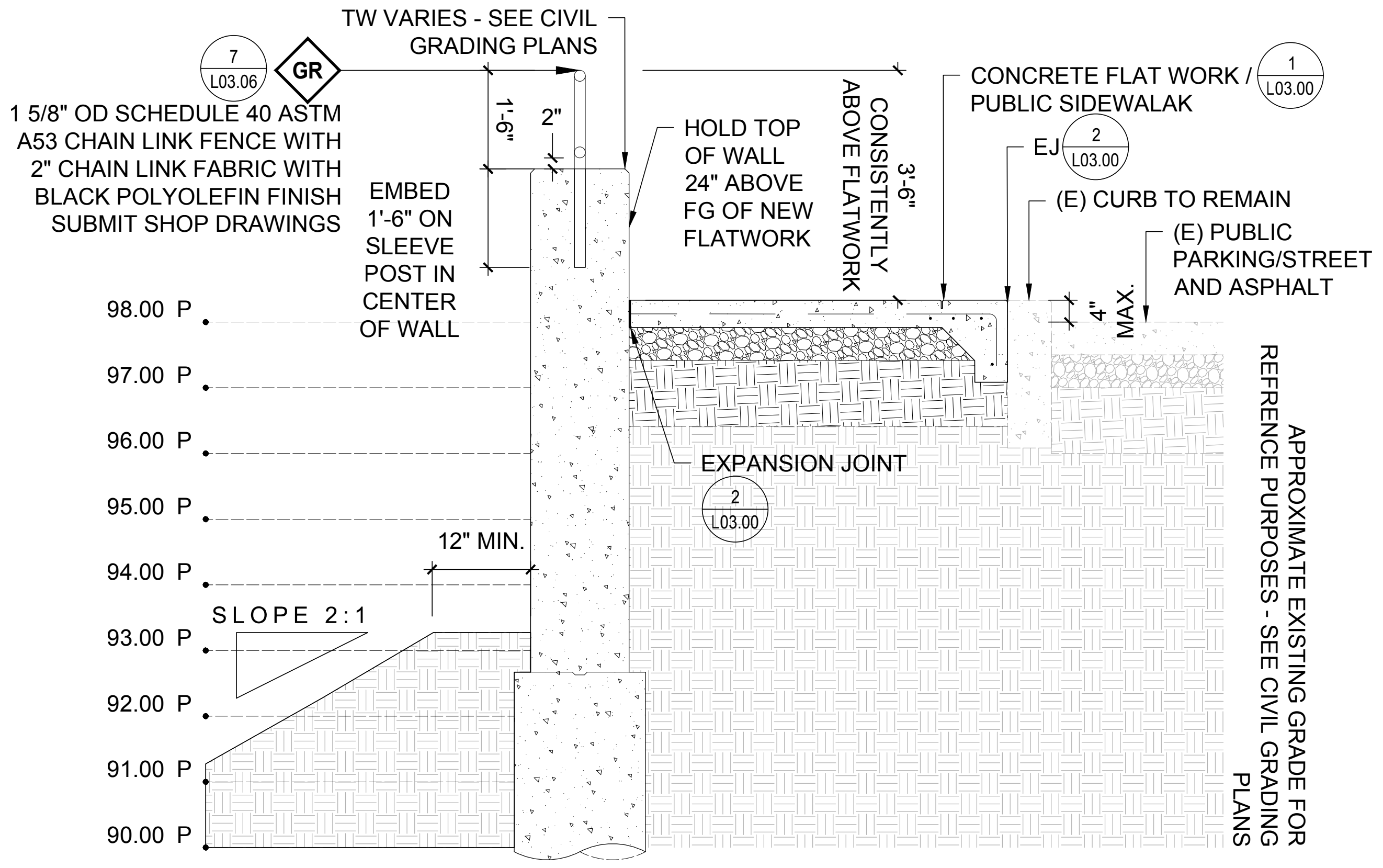
1 RETAINING WALL PLAN ENLARGEMENT

SCALE: 1/2" = 1'


TOP PORTION OF
GUARDRAIL TO BE CHAIN
LINK FENCING. BLACK
POLYOLEFIN OPEN 2"
CHAIN LINK FENCE MESH
7
L03.06
3
L03.03
GUARD RAIL
POSTS 6" O/C
FROM ENDS OF
WALL
3'-10" TYP.
GR
1'-6"
2'-0"
2"
100 P
99.00 P
98.00 P
97.00 P
96.00 P
95.00 P
94.00 P
93.00 P
P 99.65
P 98.42
P 98.43
P 97.00
P 96.00
P 95.00
P 94.00
P 93.00
FINISH GRADE OF NEW
CONCRETE FLATWORK
BEHIND WALL
3
L03.03
WALL JOINTS
FINISH GRADE
5'-8" TYP.
5'-8" TYP.
WALL JOINTS
WITH WEEPS @
4' MAX OC
1
S4.1
APPROXIMATE EXISTING
GRADE FOR REFRENCE
PURPOSES - SEE CIVIL
GRADING PLANS

2 RETAINING WALL ELEVATION

SCALE: 1/2" = 1'


TW VARIES - SEE CIVIL
GRADING PLANS
7
L03.06
GR
1 5/8" OD SCHEDULE 40 ASTM
A53 CHAIN LINK FENCE WITH
2" CHAIN LINK FABRIC WITH
BLACK POLYOLEFIN FINISH
SUBMIT SHOP DRAWINGS
1'-6"
2"
EMBED
1'-6" ON
SLEEVE
POST IN
CENTER
OF WALL
HOLD TOP
OF WALL
24" ABOVE
FG OF NEW
FLATWORK
3'-6"
CONSISTENTLY
ABOVE FLATWORK
CONCRETE FLAT WORK /
PUBLIC SIDEWALAK
1
L03.00
EJ
2
L03.00
(E) CURB TO REMAIN
(E) PUBLIC
PARKING/STREET
AND ASPHALT
4"
MAX.
98.00 P
97.00 P
96.00 P
95.00 P
94.00 P
93.00 P
92.00 P
91.00 P
90.00 P
EXPANSION JOINT
2
L03.00
12" MIN.
SLOPE 2:1
APPROXIMATE EXISTING GRADE FOR
REFRENCE PURPOSES - SEE CIVIL GRADING
PLANS

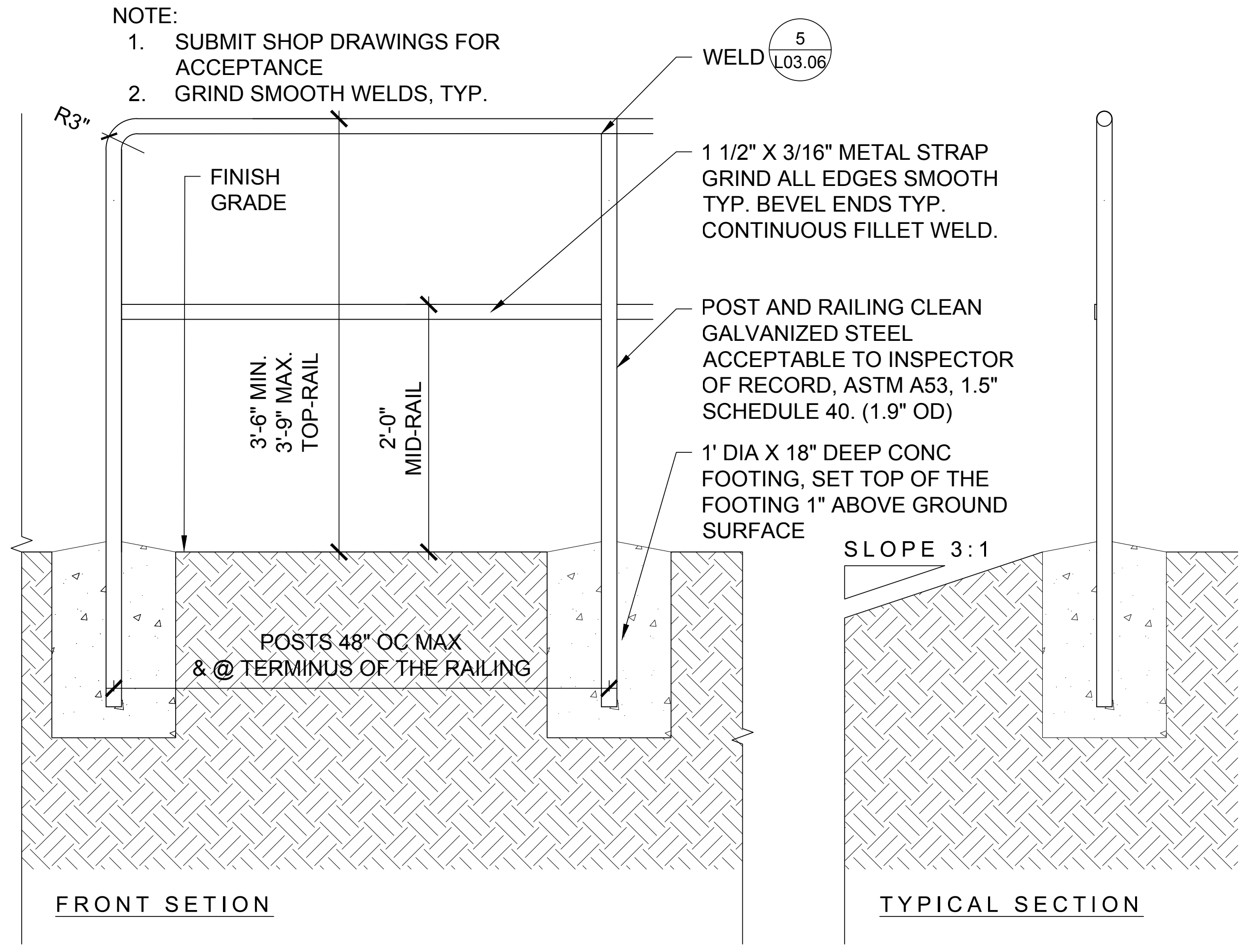
NOTE: SEE STRUCTURAL
DRAWINGS FOR MORE
INFORMATION SEE DETAIL
1/S4.1

NOTES:
1. NATURAL COLOR CONC WITH LAMP BLACK
2. MEDIUM SAND BLAST FINISH
3. PROVIDE MOCK UP

3 RETAINING WALL SECTION

SCALE: 1/2" = 1'

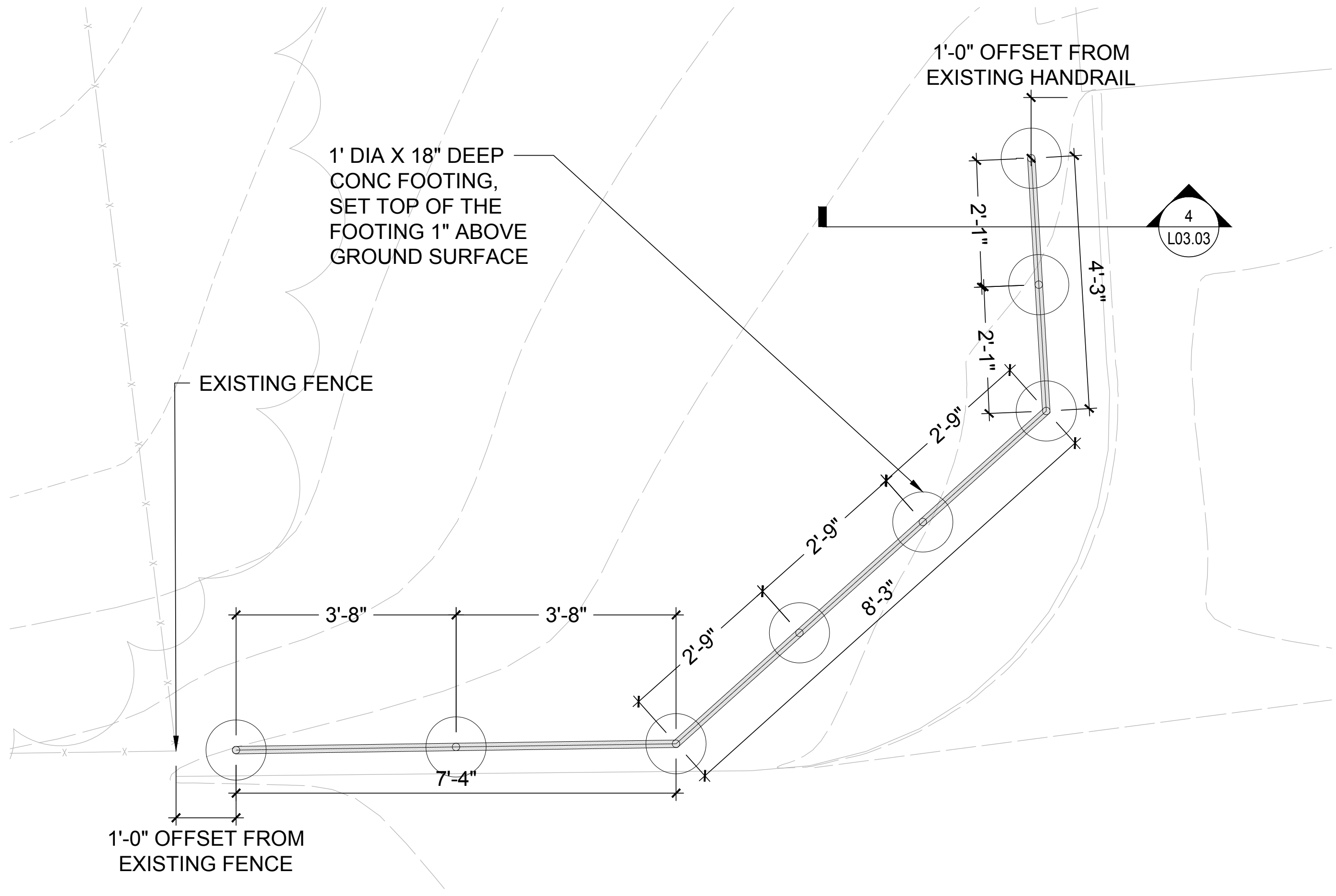
NOTE:
1. SUBMIT SHOP DRAWINGS FOR ACCEPTANCE
2. GRIND SMOOTH WELDS, TYP.


WELD
5
L03.06
R3"
FINISH
GRADE
1 1/2" X 3/16" METAL STRAP
GRIND ALL EDGES SMOOTH
TYP. BEVEL ENDS TYP.
CONTINUOUS FILLET WELD.
3'-6" MIN.
3'-9" MAX.
TOP-RAIL
2'-0"
MID-RAIL
POST AND RAILING CLEAN
GALVANIZED STEEL
ACCEPTABLE TO INSPECTOR
OF RECORD, ASTM A53, 1.5"
SCHEDULE 40. (1.9" OD)
1' DIA X 18" DEEP CONC
FOOTING, SET TOP OF THE
FOOTING 1" ABOVE GROUND
SURFACE
SLOPE 3:1
POSTS 48" OC MAX
& @ TERMINUS OF THE RAILING
FRONT SETION
TYPICAL SECTION

4 BICYCLE RAILING

SCALE: 1" = 1'

NOTE
PER DSA IR A-22 SECTION 2.1.2.1: THIS PROJECT ELEMENT IS NOT A PART OF THE DSA STRUCTURAL APPROVAL SYSTEM BUT IS A PART OF THE DSA ACCESSIBILITY AND FIRE LIFE SAFETY APPROVAL SYSTEM.


1'-0" OFFSET FROM
EXISTING HANDRAIL
1' DIA X 18" DEEP
CONC FOOTING,
SET TOP OF THE
FOOTING 1" ABOVE
GROUND SURFACE
4
L03.03
2'-1"
4'-3"
2'-1"
EXISTING FENCE
2'-9"
2'-9"
8'-3"
2'-9"
3'-8"
3'-8"
7'-4"
1'-0" OFFSET FROM
EXISTING FENCE
N

5 BARRIER RAIL ENLARGEMENT

SCALE: 1/2" = 1'

NOTE
PER DSA IR A-22 SECTION 2.1.2.1: THIS PROJECT ELEMENT IS NOT A PART OF THE DSA STRUCTURAL APPROVAL SYSTEM BUT IS A PART OF THE DSA ACCESSIBILITY AND FIRE LIFE SAFETY APPROVAL SYSTEM.

Peter Stanley 2/17/2023 4:52 PM

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APP: 01-120489 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 3/20/2022

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WILLIAM E. FEE
2537
Bill Fee
12.31.2024
02.17.2023

OWNER
TAMALPAIS UNION
HIGH SCHOOL
DISTRICT

PROJECT
RED HILL
COMMUNITY
SPORTS PARK
RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

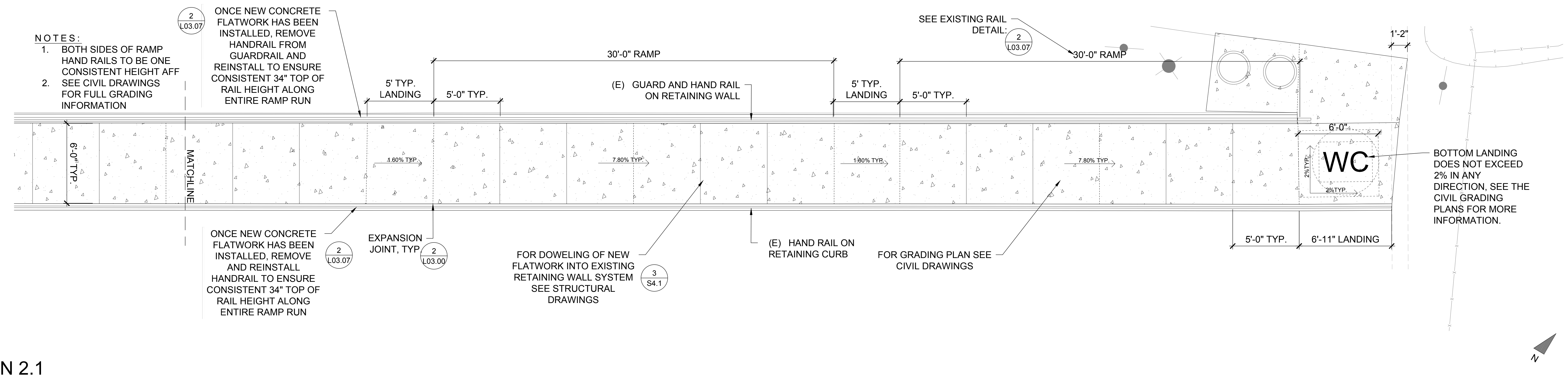
DSA SUBMITTAL

FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE: 02.17.2023
SCALE: AS SHOWN
PROJECT NO: TAM22-01

SHEET TITILE
DETAILS - RETAINING
WALL AND RAILING

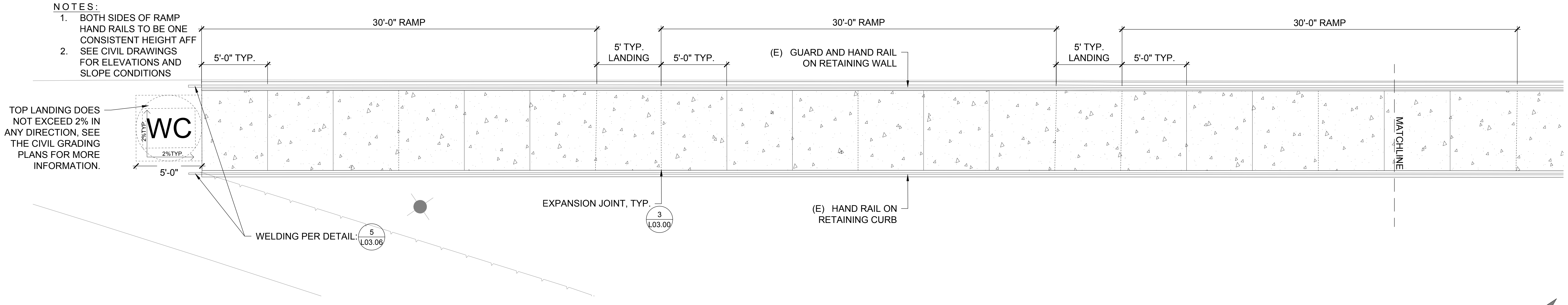
SHEET NUMBER
L03.03


2
L03.07
ONCE NEW CONCRETE FLATWORK HAS BEEN INSTALLED, REMOVE HANDRAIL FROM GUARDRAIL AND REINSTALL TO ENSURE CONSISTENT 34" TOP OF RAIL HEIGHT ALONG ENTIRE RAMP RUN
30'-0" RAMP
5' TYP. LANDING
5'-0" TYP.
(E) GUARD AND HAND RAIL ON RETAINING WALL
5' TYP. LANDING
5'-0" TYP.
SEE EXISTING RAIL DETAIL:
2
L03.07
30'-0" RAMP
1'-2"
6'-0" TYP.
MATCHLINE
1.60% TYP.
7.80% TYP.
1.60% TYP.
7.80% TYP.
6'-0"
WC
2%TYP.
2%TYP.
BOTTOM LANDING DOES NOT EXCEED 2% IN ANY DIRECTION, SEE THE CIVIL GRADING PLANS FOR MORE INFORMATION.
ONCE NEW CONCRETE FLATWORK HAS BEEN INSTALLED, REMOVE AND REINSTALL HANDRAIL TO ENSURE CONSISTENT 34" TOP OF RAIL HEIGHT ALONG ENTIRE RAMP RUN
2
L03.07
EXPANSION JOINT, TYP.
2
L03.00
FOR DOWELING OF NEW FLATWORK INTO EXISTING RETAINING WALL SYSTEM SEE STRUCTURAL DRAWINGS
3
S4.1
(E) HAND RAIL ON RETAINING CURB
FOR GRADING PLAN SEE CIVIL DRAWINGS
5'-0" TYP.
6'-11" LANDING
N

NOTES:
1. BOTH SIDES OF RAMP HAND RAILS TO BE ONE CONSISTENT HEIGHT AFF
2. SEE CIVIL DRAWINGS FOR FULL GRADING INFORMATION

1 RAMP PLAN 2.1

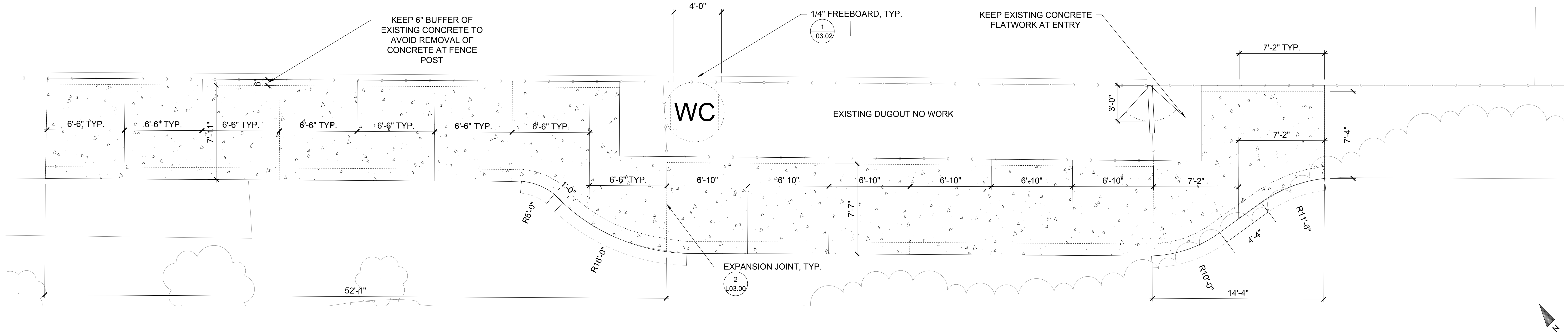
SCALE: 1/4" = 1'


30'-0" RAMP
5'-0" TYP.
5' TYP. LANDING
5'-0" TYP.
30'-0" RAMP
(E) GUARD AND HAND RAIL ON RETAINING WALL
5' TYP. LANDING
5'-0" TYP.
30'-0" RAMP
TOP LANDING DOES NOT EXCEED 2% IN ANY DIRECTION, SEE THE CIVIL GRADING PLANS FOR MORE INFORMATION.
WC
2%TYP.
2%TYP.
5'-0"
MATCHLINE
EXPANSION JOINT, TYP.
3
L03.00
(E) HAND RAIL ON RETAINING CURB
WELDING PER DETAIL:
5
L03.06
N

NOTES:
1. BOTH SIDES OF RAMP HAND RAILS TO BE ONE CONSISTENT HEIGHT AFF
2. SEE CIVIL DRAWINGS FOR ELEVATIONS AND SLOPE CONDITIONS

2 RAMP PLAN 2.2

SCALE: 1/4" = 1'


KEEP 6" BUFFER OF EXISTING CONCRETE TO AVOID REMOVAL OF CONCRETE AT FENCE POST
4'-0"
1/4" FREEBOARD, TYP.
1
L03.02
KEEP EXISTING CONCRETE FLATWORK AT ENTRY
7'-2" TYP.
6"
6'-6" TYP.
6'-6" TYP.
6'-6" TYP.
6'-6" TYP.
6'-6" TYP.
6'-6" TYP.
6'-6" TYP.
7'-11"
WC
EXISTING DUGOUT NO WORK
3'-0"
7'-2"
7'-4"
6'-6" TYP.
6'-10"
6'-10"
6'-10"
6'-10"
6'-10"
6'-10"
7'-2"
7'-7"
1'-0"
R5'-0"
R16'-0"
R11'-6"
4'-4"
R10'-0"
EXPANSION JOINT, TYP.
2
L03.00
52'-1"
14'-4"
N

3 FLATWORK ENLARGEMENT PLAN

SCALE: 1/4" = 1'

Peter Stanley 2/17/2023 4:52 PM

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www.carducciassociates.com

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12.31.2024
02.17.2023

OWNER
TAMALPAIS UNION HIGH SCHOOL DISTRICT

PROJECT
RED HILL COMMUNITY SPORTS PARK RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

IF THE CONTRACTOR ENCOUNTERS ERRORS OR DISCREPANCIES ON THE DRAWINGS, OR SITE CONDITIONS WHICH PREVENT OR DELAY THE COMPLETION OF WORK AS INDICATED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND LANDSCAPE ARCHITECT BY THE TIME OF BID OF ALL SUCH ERRORS, DISCREPANCIES AND OMISSIONS. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE LANDSCAPE ARCHITECT AND THE OWNER HARMLESS IF AFTER CONTRACTING FOR THE WORK HE HAS MONETARY DAMAGE BECAUSE OF SITE CONDITIONS, ERRORS, DISCREPANCIES OR OMISSIONS AT THE TIME OF BID.

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#	DESCRIPTION	DATE

DSA SUBMITTAL

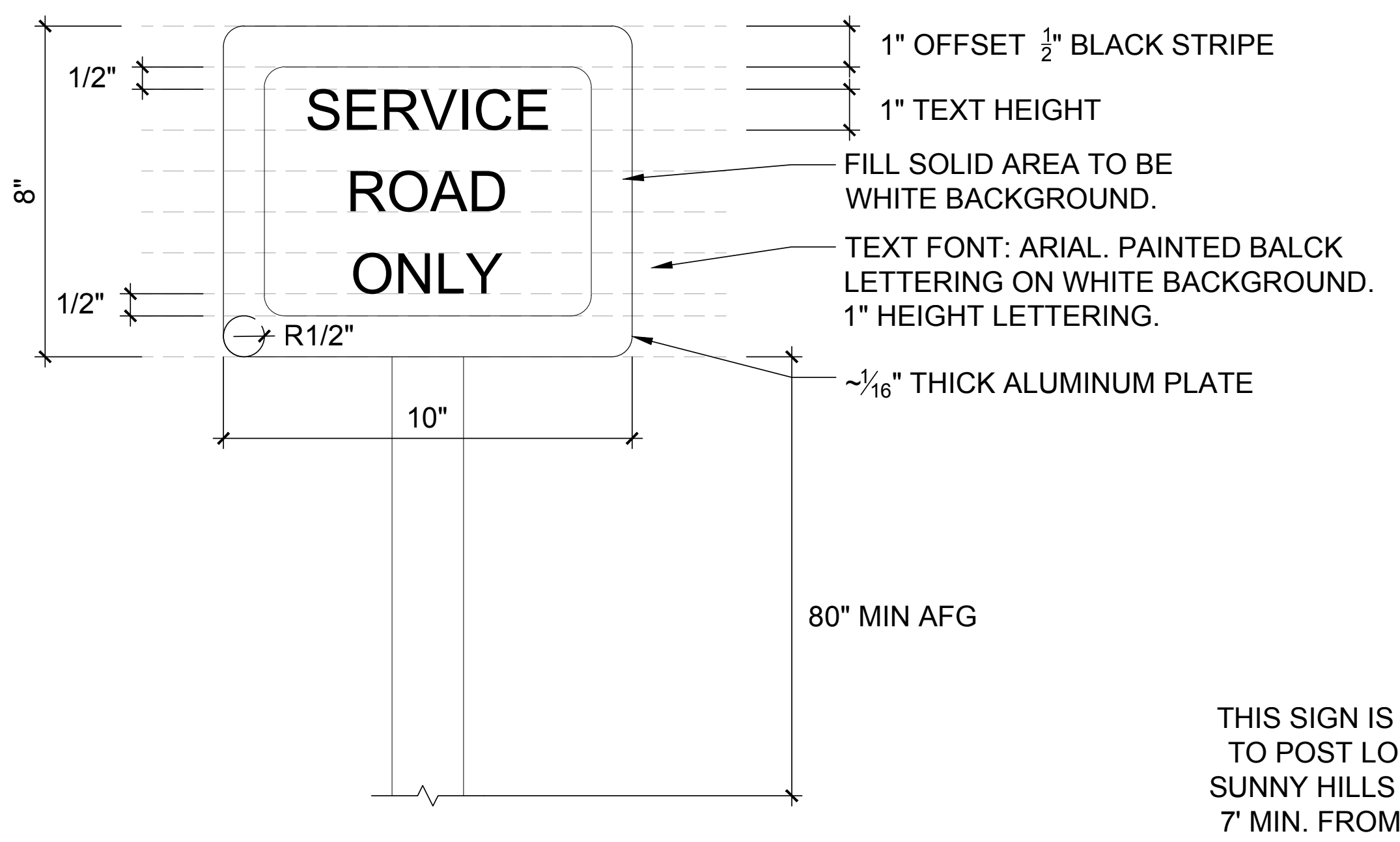
FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE:	02.17.2023
SCALE:	AS SHOWN
PROJECT NO:	TAM22-01

SHEET TITLE
DETAILS - SITE ENLARGEMENTS

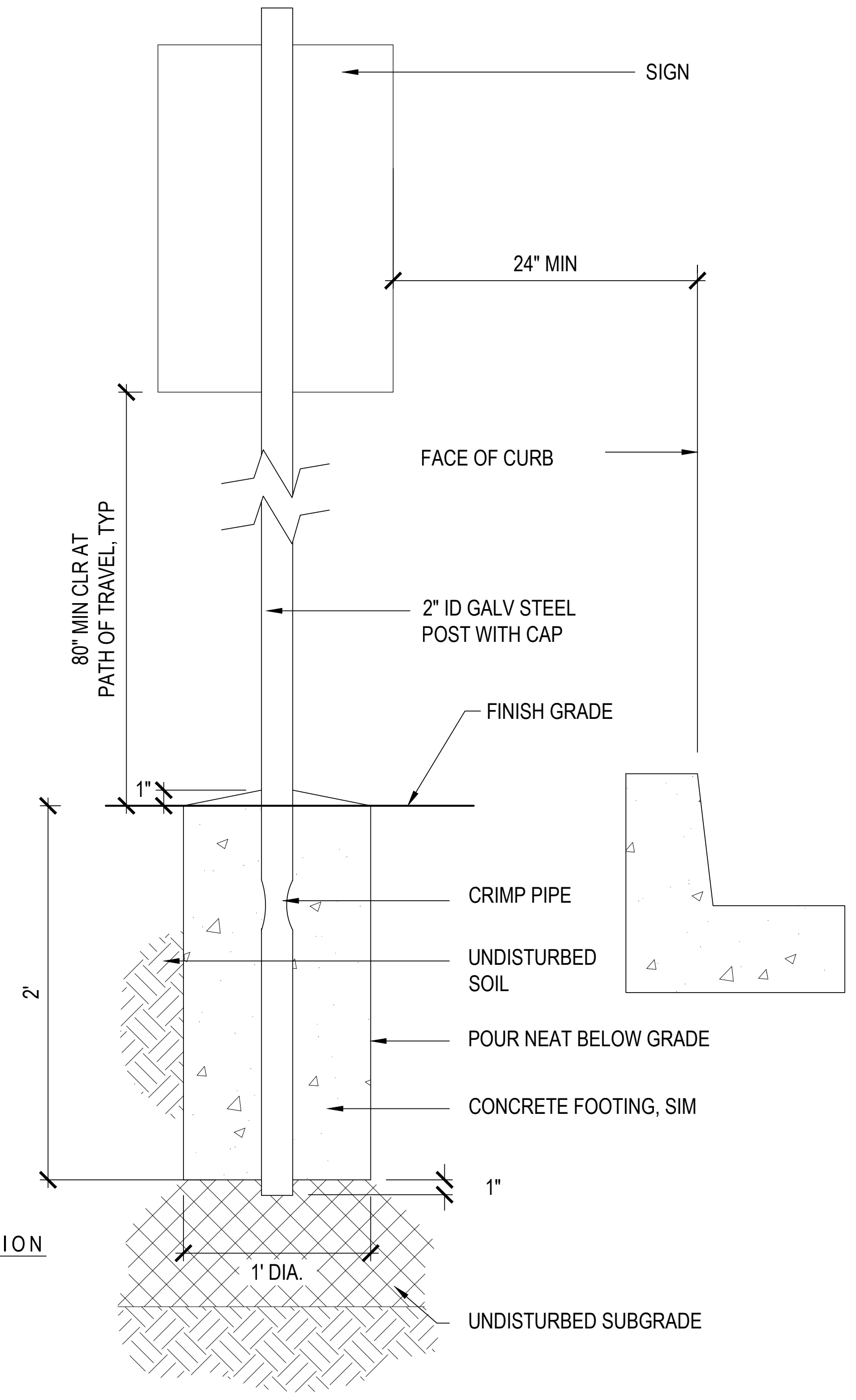
SHEET NUMBER
L03.04

NOTES:
1. APPLY GRAFFITI RESISTANT COATING TO EXPOSED SIDES OF SIGN.
2. (1) SIGN TO BE ATTACHED TO EXISTING SIGN POST.
3. SUBMIT SHOP DRAWINGS.

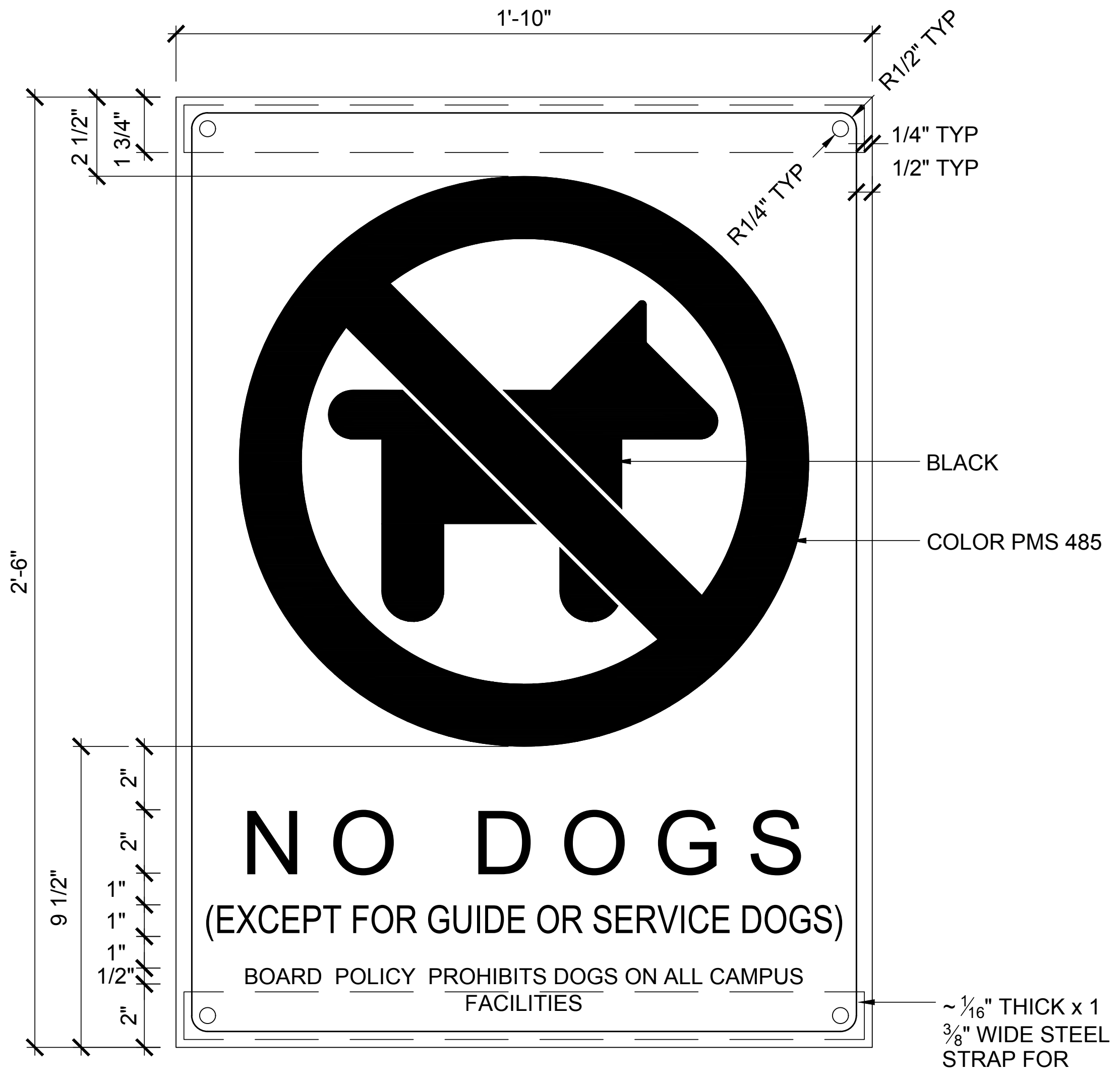

SERVICE
ROAD
ONLY
1/2"
8"
1/2"
R1/2"
10"
1" OFFSET 1/2" BLACK STRIPE
1" TEXT HEIGHT
FILL SOLID AREA TO BE WHITE BACKGROUND.
TEXT FONT: ARIAL. PAINTED BALCK LETTERING ON WHITE BACKGROUND. 1" HEIGHT LETTERING.
~1/16" THICK ALUMINUM PLATE
80" MIN AFG

THIS SIGN IS TO BE AFFIXED TO POST LOCATED AT THE SUNNY HILLS PARKENTRY AT 7' MIN. FROM FINISH GRADE TO BOTTOM OF SIGN.

7 SERVICE ROAD SIGN
SCALE: 3" = 1'


SIGN
24" MIN
FACE OF CURB
80" MIN CLR AT PATH OF TRAVEL, TYP
2" ID GALV STEEL POST WITH CAP
FINISH GRADE
1"
CRIMP PIPE
UNDISTURBED SOIL
2'
POUR NEAT BELOW GRADE
CONCRETE FOOTING, SIM
1"
SECTION
1' DIA.
UNDISTURBED SUBGRADE

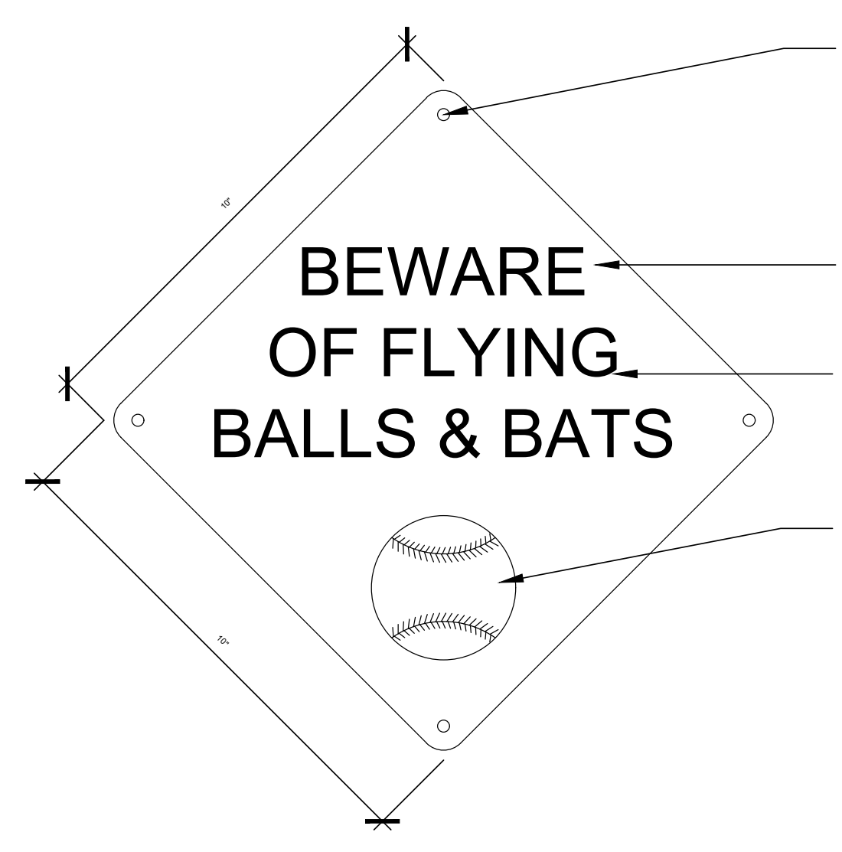
8 SIGN INSTALLATION
SCALE: 1 1/2" = 1'


1'-10"
R1/2" TYP
1/4" TYP
1/2" TYP
R1/4" TYP
2 1/2"
1 3/4"
2'-6"
BLACK
COLOR PMS 485
NO DOGS
(EXCEPT FOR GUIDE OR SERVICE DOGS)
BOARD POLICY PROHIBITS DOGS ON ALL CAMPUS FACILITIES
9 1/2"
2"
2"
1"
1"
1"
1/2"
2"
~1/16" THICK x 1 3/8" WIDE STEEL STRAP FOR MOUNTING SIGN TO FENCE TYP
1
L03.05

MOUNT SIGN ON CHAIN LINK FENCE FABRIC ADJACENT TO STRIKE POST OF ACCESSIBLE DUGOUT GATES AT 5' O/C ABOVE FG

NOTE: TEXT FONT-ARIAL NARROW, BLACK LETTERING PAINTED ON WHITE BACKGROUND (VINYL LETTERS NOT ACCEPTABLE), 0.080 GAUGE ALUMINUM SUBSTRATE. PRE-DRILL FOR (4) SIGN MOUNT BOLTS AT CORNERS. SUBMIT SHOP DRAWINGS FOR REVIEW. TEXT SHOWN FOR BID PURPOSES ONLY. FINAL TEXT TO BE PROVIDED BY DISTRICT.

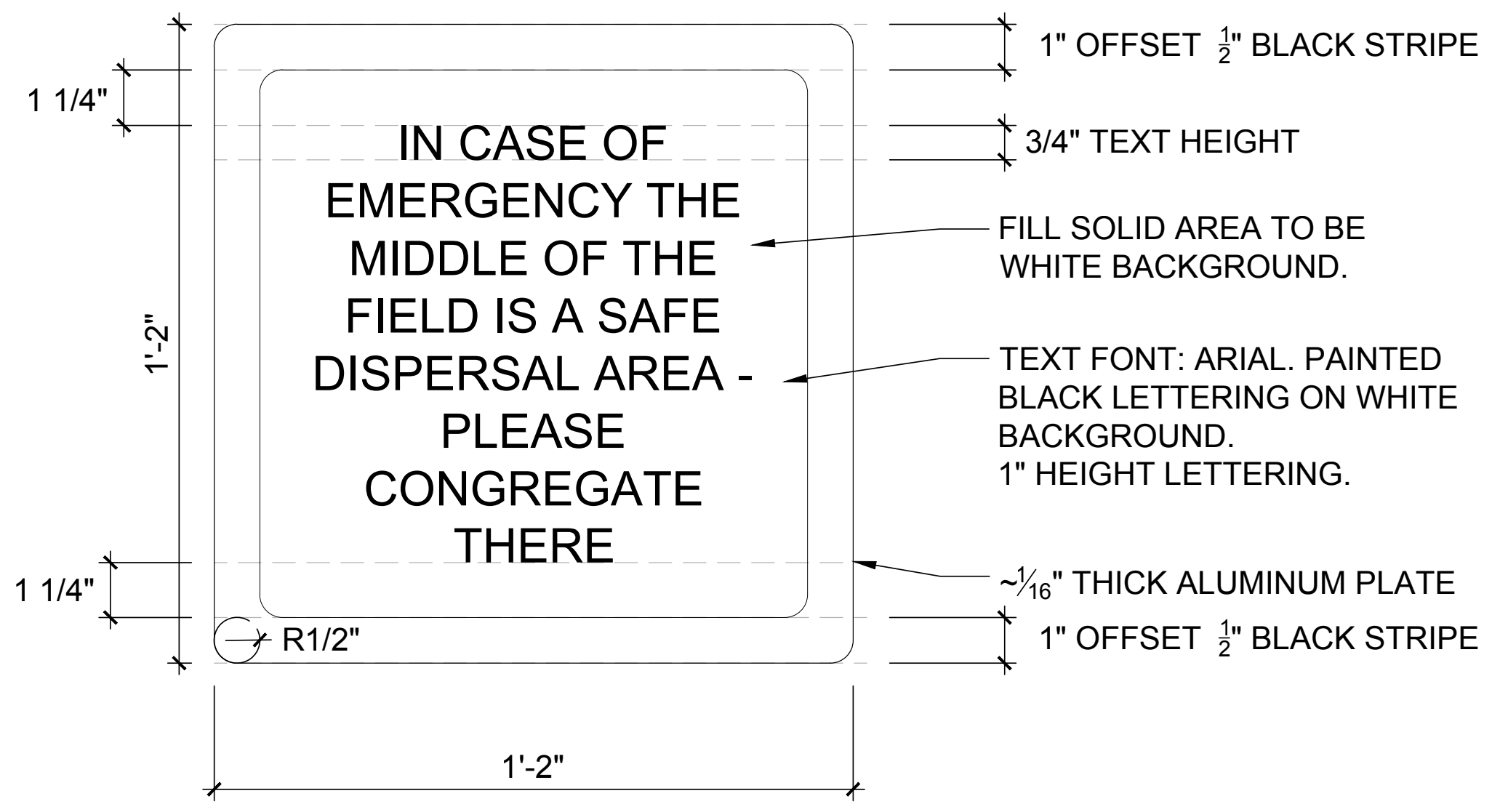
4 REGULATORY SIGN - NO DOGS
SCALE: 3" = 1'


BEWARE
OF FLYING
BALLS & BATS
1/4" DIA. HOLES ON METAL PLATE, SECURE PLATE WITH NON-RUSTING, VANDAL-RESISTANT WOOD SCREW TO WOOD PLANK, TYP. OF (4), 2" MIN. FOR LENGTH OF SCREW, LENGTH SHALL NOT BE LONGER THAN THE THICKNESS OF THE WOOD PLANK, FIELD VERIFY.
~1/16" THICK STEEL PLATE MOUNTING ON WOOD PLANKING, COORDINATE WITH OWNER FOR LOCATIONS
TEXT FONT: ARIAL. PAINTED BLACK LETTERING ON BEIGE BACKGROUND. VINYL LETTERING IS NOT ACCEPTABLE.
FILL BASEBALL AREA WITH WHITE AND SEAMS TO BE RED 1/8" WIDTH IN DASHES

NOTE:
1. APPLY GRAFFITI RESISTANT COATING TO EXPOSED SIDES OF SIGN.
2. FOR SIGN MOUNTING ON FENCE, SEE DETAIL: 1/L03.05
3. LOCATED IN EACH DUGOUT, ABOVE (E) BENCHES AND PLACED 5' AT CENTER OF SIGN ABOVE FINISH GRADE.

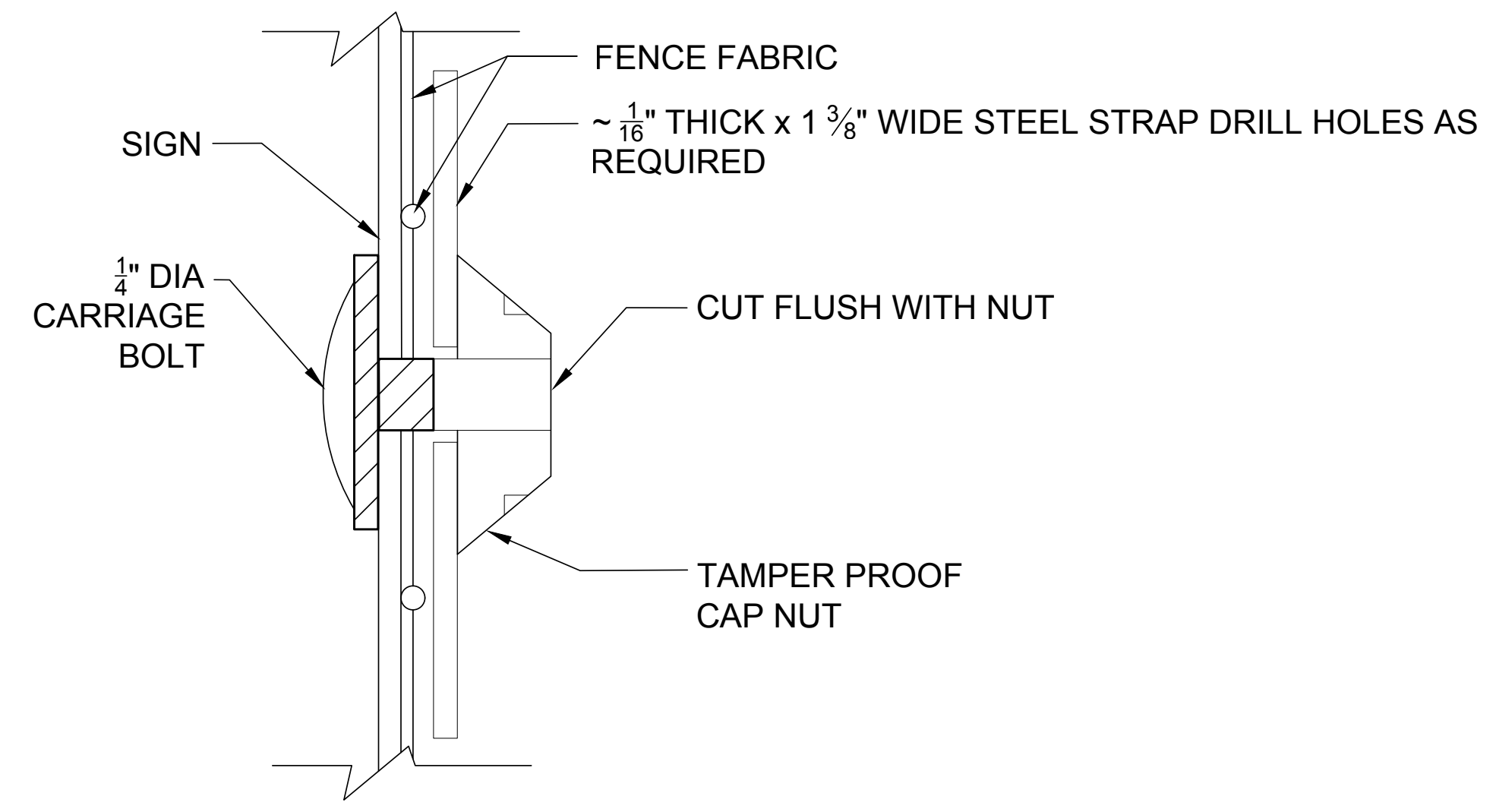
5 FLYING BALLS AND BATS WARNING SIGN
SCALE: 3" = 1'

NOTES:
1. APPLY GRAFFITI RESISTANT COATING TO EXPOSED SIDES OF SIGN.
2. (1) SIGN TO BE ATTACHED TO EXISTING SIGN POST.


IN CASE OF
EMERGENCY THE
MIDDLE OF THE
FIELD IS A SAFE
DISPERSAL AREA -
PLEASE
CONGREGATE
THERE
1 1/4"
1'-2"
1 1/4"
R1/2"
1'-2"
1" OFFSET 1/2" BLACK STRIPE
3/4" TEXT HEIGHT
FILL SOLID AREA TO BE WHITE BACKGROUND.
TEXT FONT: ARIAL. PAINTED BLACK LETTERING ON WHITE BACKGROUND. 1" HEIGHT LETTERING.
~1/16" THICK ALUMINUM PLATE
1" OFFSET 1/2" BLACK STRIPE

MOUNT SIGN ON CHAIN LINK FENCE FABRIC ADJACENT TO STRIKE POST OF ACCESSIBLE DUGOUT GATES AT 5' O/C ABOVE FG

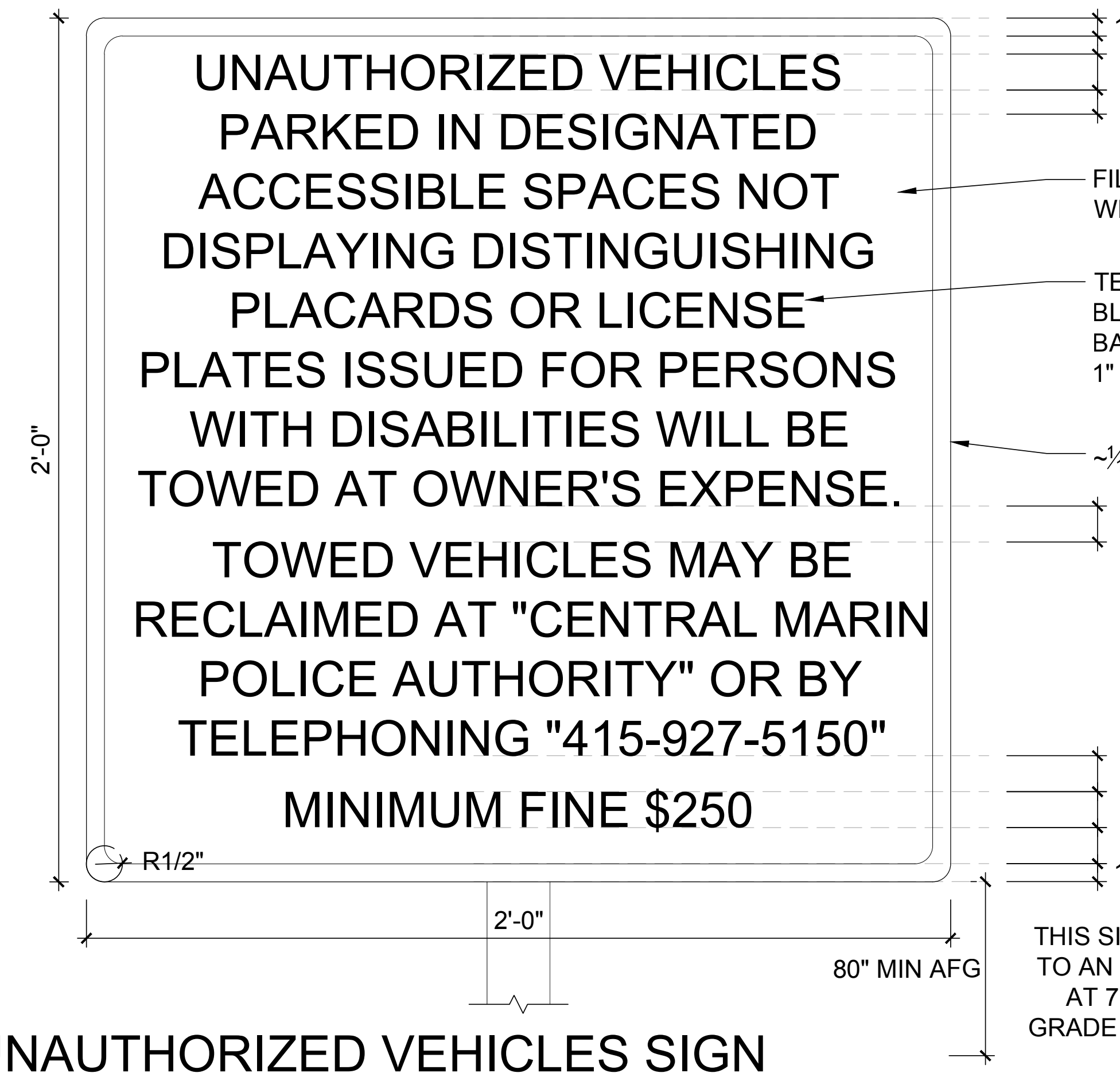
6 SAFE DISPERSAL AREA SIGN
SCALE: 3" = 1'


FENCE FABRIC
SIGN
~1/16" THICK x 1 3/8" WIDE STEEL STRAP DRILL HOLES AS REQUIRED
1/4" DIA CARRIAGE BOLT
CUT FLUSH WITH NUT
TAMPER PROOF CAP NUT

NOTES:
1. ALL HARDWARE HOT DIPPED GALVANIZED.
2. LOCATE SIGNS WHERE DIRECTED BY DISTRICT.

1 SIGN MOUNTING ON FENCE
SCALE: 1' = 1'

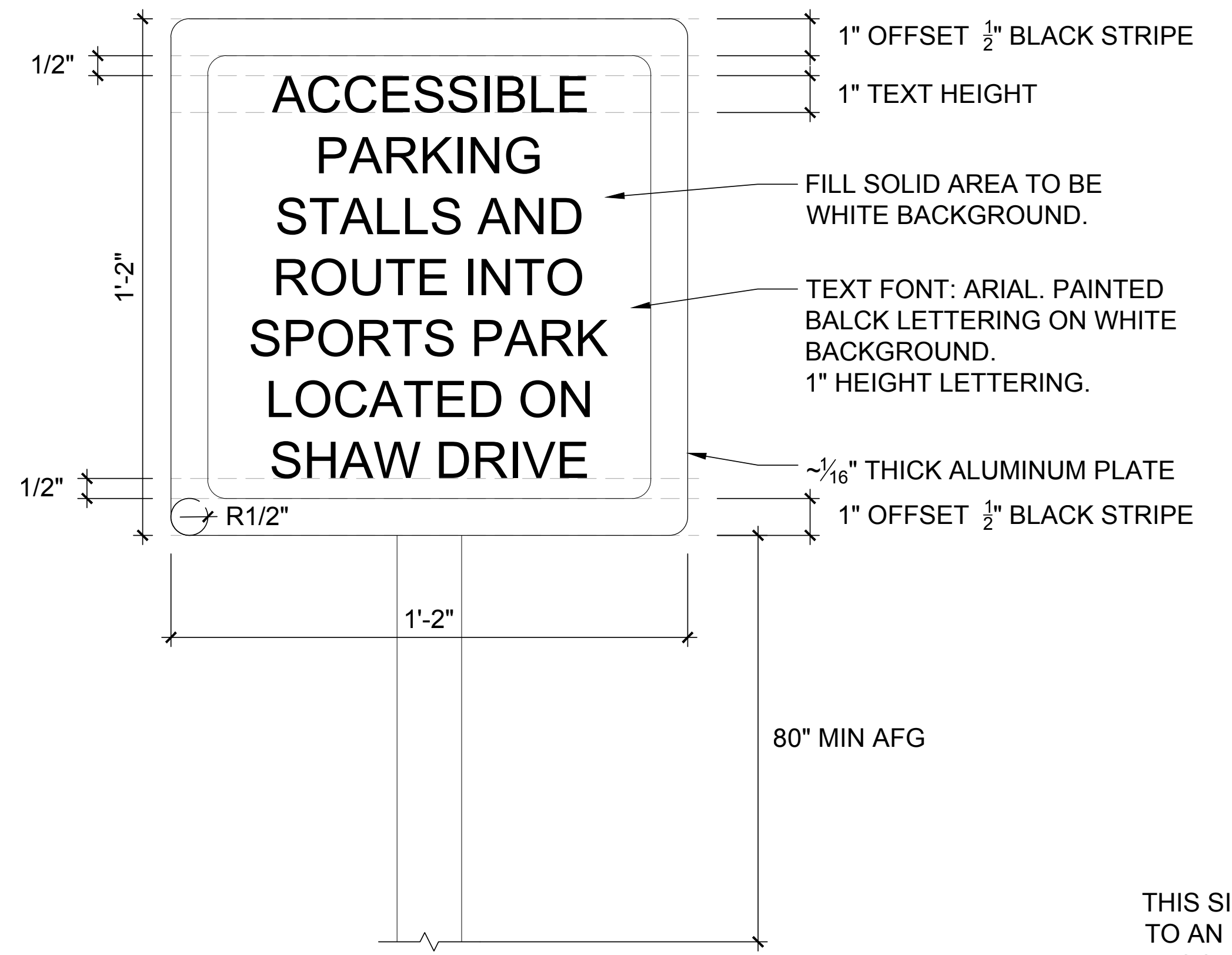
NOTES:
1. APPLY GRAFFITI RESISTANT COATING TO EXPOSED SIDES OF SIGN.
2. (1) SIGN TO BE ATTACHED TO EXISTING SIGN POST.


UNAUTHORIZED VEHICLES
PARKED IN DESIGNATED
ACCESSIBLE SPACES NOT
DISPLAYING DISTINGUISHING
PLACARDS OR LICENSE
PLATES ISSUED FOR PERSONS
WITH DISABILITIES WILL BE
TOWED AT OWNER'S EXPENSE.
TOWED VEHICLES MAY BE
RECLAIMED AT "CENTRAL MARIN
POLICE AUTHORITY" OR BY
TELEPHONING "415-927-5150"
MINIMUM FINE $250
2'-0"
R1/2"
2'-0"
80" MIN AFG
1/2" OFFSET 1/2" BLACK STRIPE
1" TEXT HEIGHT
5/8" SPACING
FILL SOLID AREA TO BE WHITE BACKGROUND.
TEXT FONT: ARIAL. PAINTED BLACK LETTERING ON WHITE BACKGROUND. 1" HEIGHT LETTERING.
~1/16" THICK ALUMINUM PLATE
1" SPACING
1" SPACING
1" TEXT HEIGHT
1" SPACING
1/2" OFFSET 1/2" BLACK STRIPE

THIS SIGN IS TO BE AFFIXED TO AN EXISTING SIGN POST AT 7' MIN. FROM FINISH GRADE TO BOTTOM OF SIGN.

2 UNAUTHORIZED VEHICLES SIGN
SCALE: 3" = 1'

NOTES:
1. APPLY GRAFFITI RESISTANT COATING TO EXPOSED SIDES OF SIGN.
2. (1) SIGN TO BE ATTACHED TO EXISTING SIGN POST.


ACCESSIBLE
PARKING
STALLS AND
ROUTE INTO
SPORTS PARK
LOCATED ON
SHAW DRIVE
1/2"
1'-2"
1/2"
R1/2"
1'-2"
80" MIN AFG
1" OFFSET 1/2" BLACK STRIPE
1" TEXT HEIGHT
FILL SOLID AREA TO BE WHITE BACKGROUND.
TEXT FONT: ARIAL. PAINTED BALCK LETTERING ON WHITE BACKGROUND. 1" HEIGHT LETTERING.
~1/16" THICK ALUMINUM PLATE
1" OFFSET 1/2" BLACK STRIPE

THIS SIGN IS TO BE AFFIXED TO AN EXISTING SIGN POST LOCATED AT THE SUNNY HILLS PARKING AREA AT 7' MIN. FROM FINISH GRADE TO BOTTOM OF SIGN.

3 ACCESSIBLE ROUTE SIGN
SCALE: 3" = 1'

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APP: 01-120489 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 3/20/2022

ARCHITECT/ ENGINEER
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LICENSED LANDSCAPE ARCHITECT
WILLIAM E. FEE
2537
12.31.2024
02.17.2023
STATE OF CALIFORNIA

OWNER
TAMALPAIS UNION HIGH SCHOOL DISTRICT

PROJECT
RED HILL COMMUNITY SPORTS PARK RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

DSA SUBMITTAL

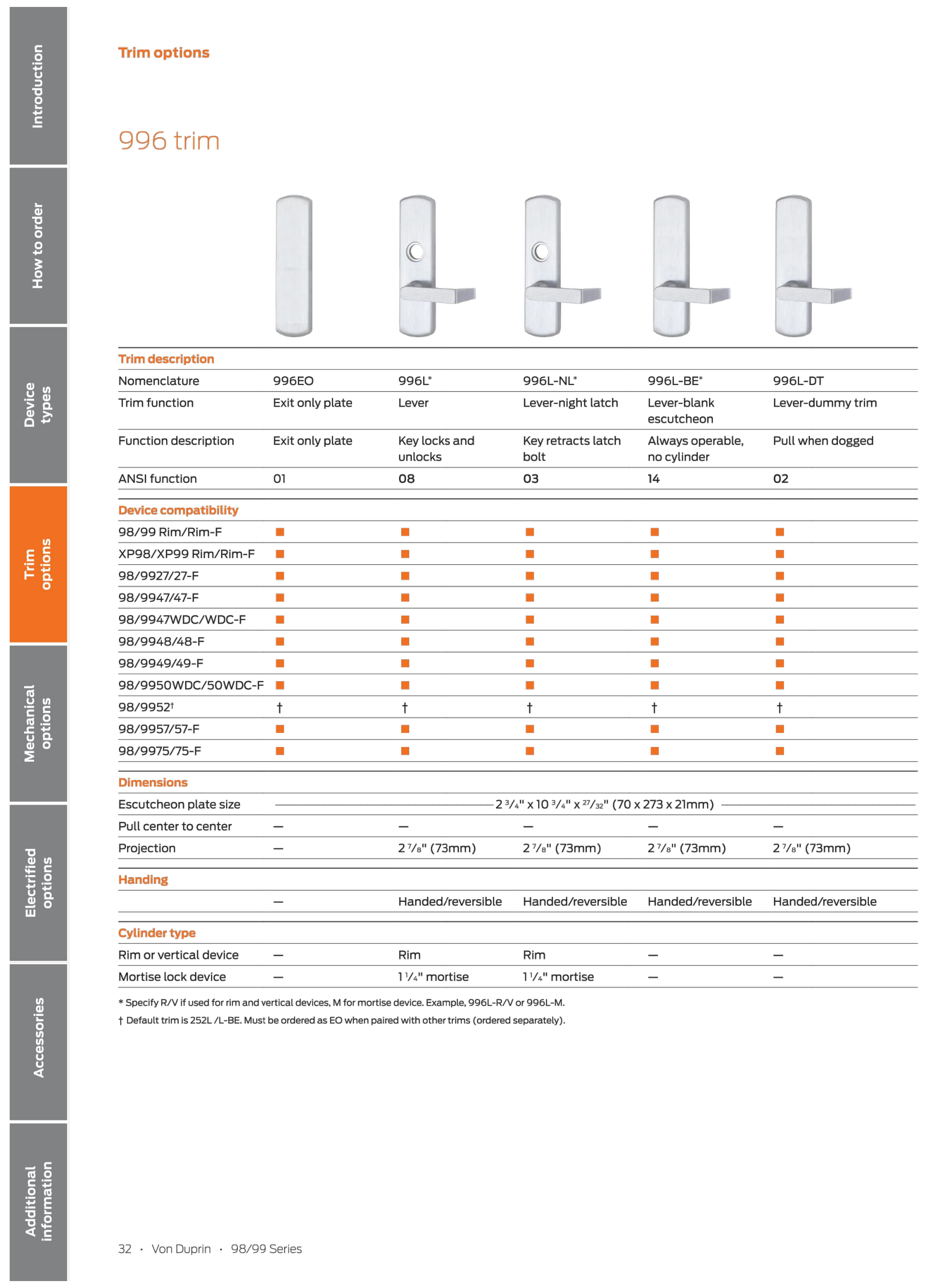
FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE: 02.17.2023
SCALE: AS SHOWN
PROJECT NO: TAM22-01

SHEET TITILE
DETAILS - SIGNAGE

SHEET NUMBER
L03.05

Peter Stanley 2/17/2023 4:52 PM



Introduction

How to order

Device types

Trim options

Mechanical options

Electrified options

Accessories

Additional information

Trim options

996 trim

Trim description					
Nomenclature	996EO	996L*	996L-NL*	996L-BE*	996L-DT
Trim function	Exit only plate	Lever	Lever-night latch	Lever-blank escutcheon	Lever-dummy trim
Function description	Exit only plate	Key locks and unlocks	Key retracts latch bolt	Always operable, no cylinder	Pull when dogged
ANSI function	01	08	03	14	02
Device compatibility					
98/99 Rim/Rim-F	■	■	■	■	■
XP98/XP99 Rim/Rim-F	■	■	■	■	■
98/9927/27-F	■	■	■	■	■
98/9947/47-F	■	■	■	■	■
98/9947WDC/WDC-F	■	■	■	■	■
98/9948/48-F	■	■	■	■	■
98/9949/49-F	■	■	■	■	■
98/9950WDC/50WDC-F	■	■	■	■	■
98/9952†	†	†	†	†	†
98/9957/57-F	■	■	■	■	■
98/9975/75-F	■	■	■	■	■
Dimensions					
Escutcheon plate size	2 3/4" x 10 3/4" x 27/32" (70 x 273 x 21mm)				
Pull center to center	—	—	—	—	—
Projection	—	2 7/8" (73mm)	2 7/8" (73mm)	2 7/8" (73mm)	2 7/8" (73mm)
Handing					
	—	Handed/reversible	Handed/reversible	Handed/reversible	Handed/reversible
Cylinder type					
Rim or vertical device	—	Rim	Rim	—	—
Mortise lock device	—	1 1/4" mortise	1 1/4" mortise	—	—

* Specify R/V if used for rim and vertical devices, M for mortise device. Example, 996L-R/V or 996L-M.

† Default trim is 252L /L-BE. Must be ordered as EO when paired with other trims (ordered separately).

32 · Von Duprin · 98/99 Series

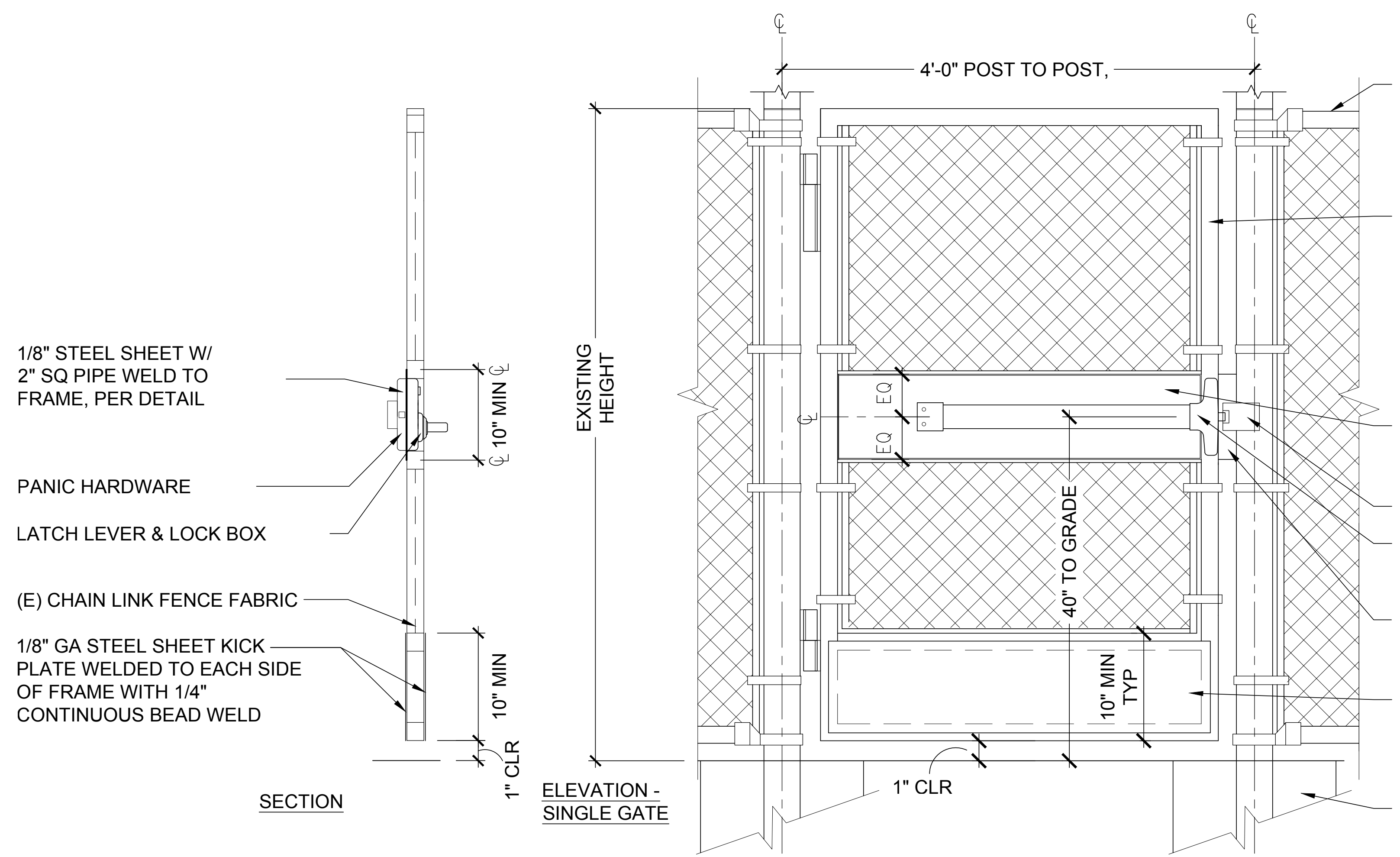
NOTES:

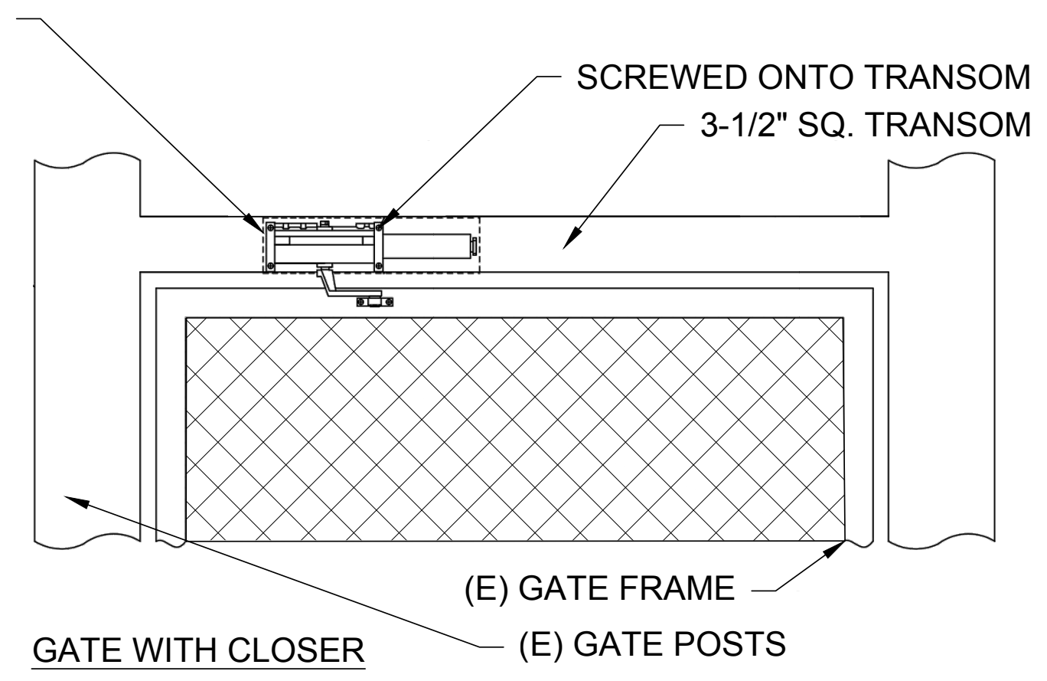
1. 996L-BE TRIM TO BE USED WITH VON DUPRIN 98/99 SERIES OR EQ. SUBMIT PRODUCT DATA FOR DISTRICT EXTERIOR TRIM (LEVER) SELECTION.
2. PANIC HARDWARE TO HAVE NO LOCK OPTION. ALWAYS OPERABLE FUNTION REQUIRED.

6

PANIC HARDWARE TRIM

SCALE: 1' = 1'


1/8" STEEL SHEET W/ 2" SQ PIPE WELD TO FRAME, PER DETAIL
PANIC HARDWARE
LATCH LEVER & LOCK BOX
(E) CHAIN LINK FENCE FABRIC
1/8" GA STEEL SHEET KICK PLATE WELDED TO EACH SIDE OF FRAME WITH 1/4" CONTINUOUS BEAD WELD
℄ 10" MIN ℄
10" MIN
1" CLR
SECTION
EXISTING HEIGHT
ELEVATION - SINGLE GATE
4'-0" POST TO POST,
℄
EQ
EQ
40" TO GRADE
10" MIN TYP
1" CLR
(E) CHAIN LINK FENCE
(E) GATE FRAME
1/4" STEEL SHEET W/ 2" SQ PIPE WELD TO FRAME, PER DETAIL
2 L03.06
STRIKE PLATE
PANIC BAR HARDWARE, PER DETAIL
2 L03.06
LATCH PROTECTOR /SLAM PLATE PER DETAIL
2 L03.06
1/8" GALVANIZED STEEL SHEET KICK PLATE WELDED TO BOTH SIDES OF FRAME W/ 1/4" BEAD WELD
(E) FOOTING


DOTTED LINES: PLASTIC COVER
SCREWED ONTO TRANSOM
3-1/2" SQ. TRANSOM
(E) GATE FRAME
(E) GATE POSTS

GATE WITH CLOSER

NOTES:

1. USED AT GATES TALLER THAN 6 FEET

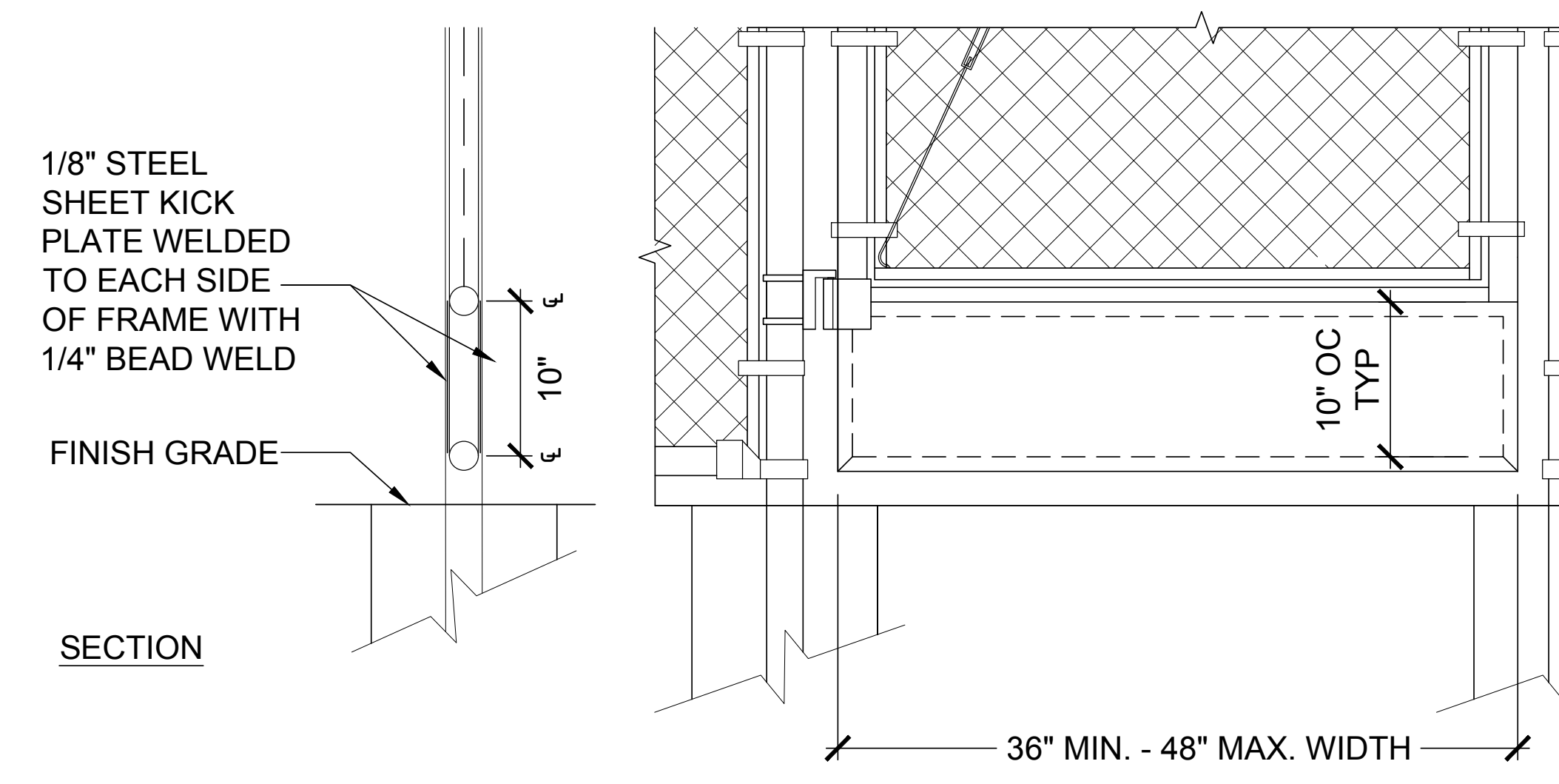
NOTES:

1. PROVIDE SHOP DRAWINGS FOR REVIEW AND ACCEPTANCE
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FABRICATE A GATE AND PROVIDE HARDWARE COMPATIBLE WITH THE GATE, TO PROVIDE A FULLY FUNCTIONAL, SELF-CLOSING GATE THAT MEETS CBC CHAPTER 10 SECTION 1010.1.10.1 AND 11B-404 REQUIREMENTS.
3. SHOP WELD TYP. HOT DIP GALVANIZE FOLLOWING FABRICATION. ALL GATE AND HARDWARE PORTIONS TO BE GALVANIZED. PANIC HARDWARE TO BE STAINLESS STEEL, VON DUPRIN 98/99 SERIES OR EQ. SUBMIT PRODUCT DATA FOR DISTRICT EXTERIOR TRIM (LEVER) SELECTION.

1

EXISTING GATE WITH ADDED ACCESSIBLE PANIC HARDWARE

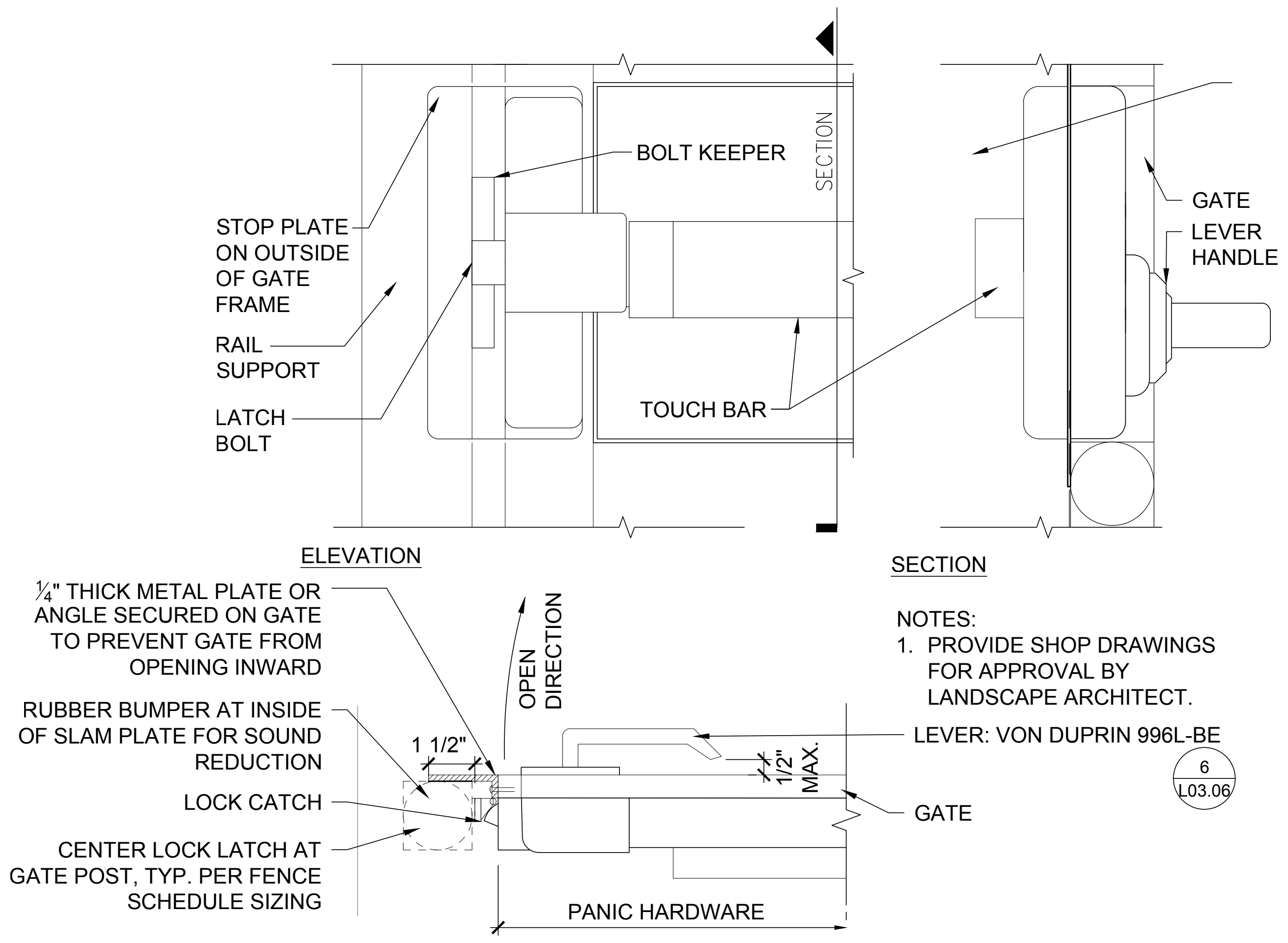
SCALE: 1" = 1'


1/8" STEEL SHEET KICK PLATE WELDED TO EACH SIDE OF FRAME WITH 1/4" BEAD WELD
FINISH GRADE
10"
℄
℄
SECTION
10" OC TYP
36" MIN. - 48" MAX. WIDTH

4

GATE - KICKPLATE ON (E) ACCESSIBLE GATE

SCALE: 1" = 1'


STOP PLATE ON OUTSIDE OF GATE FRAME
RAIL SUPPORT
LATCH BOLT
BOLT KEEPER
SECTION
TOUCH BAR
ELEVATION
GATE
LEVER HANDLE
SECTION
¼" THICK METAL PLATE OR ANGLE SECURED ON GATE TO PREVENT GATE FROM OPENING INWARD
RUBBER BUMPER AT INSIDE OF SLAM PLATE FOR SOUND REDUCTION
LOCK CATCH
CENTER LOCK LATCH AT GATE POST, TYP. PER FENCE SCHEDULE SIZING
OPEN DIRECTION
1 1/2"
1/2" MAX.
LEVER: VON DUPRIN 996L-BE
6 L03.06
GATE
PANIC HARDWARE

NOTES:

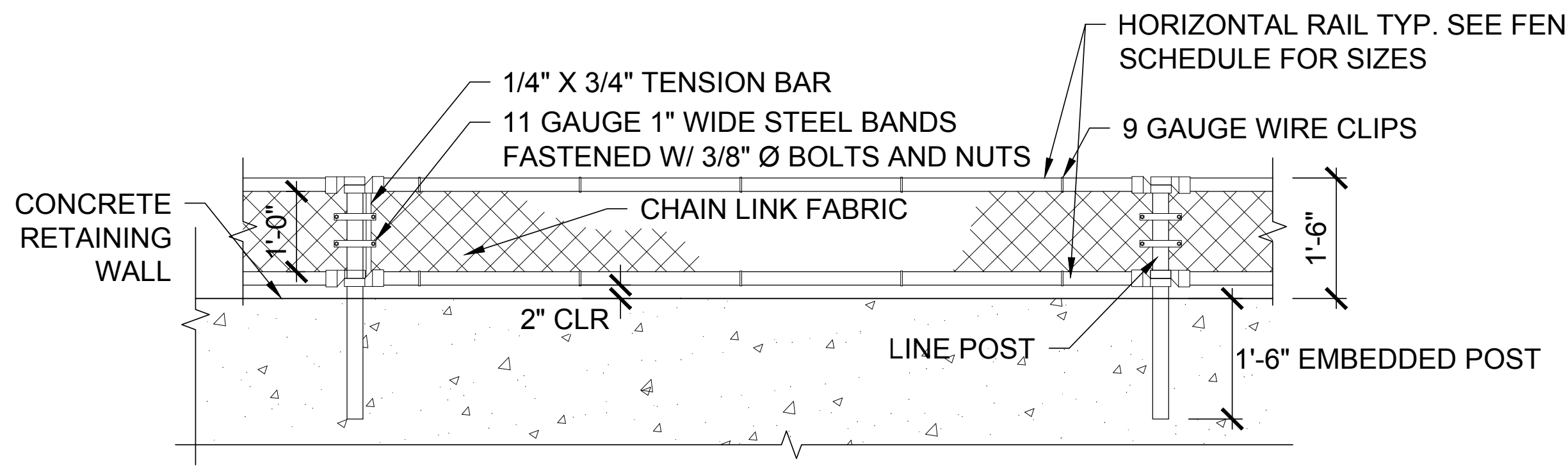
1. PROVIDE SHOP DRAWINGS FOR APPROVAL BY LANDSCAPE ARCHITECT.

ENLARGEMENT - PLAN NTS

2

PANIC HARDWARE

SCALE: 3" = 1'


1/4" X 3/4" TENSION BAR
11 GAUGE 1" WIDE STEEL BANDS FASTENED W/ 3/8" Ø BOLTS AND NUTS
HORIZONTAL RAIL TYP. SEE FENCE SCHEDULE FOR SIZES
9 GAUGE WIRE CLIPS
CONCRETE RETAINING WALL
1'-0"
CHAIN LINK FABRIC
1'-6"
2" CLR
LINE POST
1'-6" EMBEDDED POST

SECTION

FENCE SCHEDULE

"H" MAX HEIGHT ABOVE FINISH GRADE	DIAMETER & WEIGHT OF GATE,END, CORNER POST	DIAMETER & WEIGHT OF LINE POST	HORIZONTAL RAILS	MAXIMUM POST SPACING	CHAIN-LINK FABRIC SIZE
1-6" FENCE	2 3/8" OD SCHEDULE 40	1 7/8" OD SCHEDULE 40	1 5/8" OD SCHEDULE 40	8'-0" OC	2"

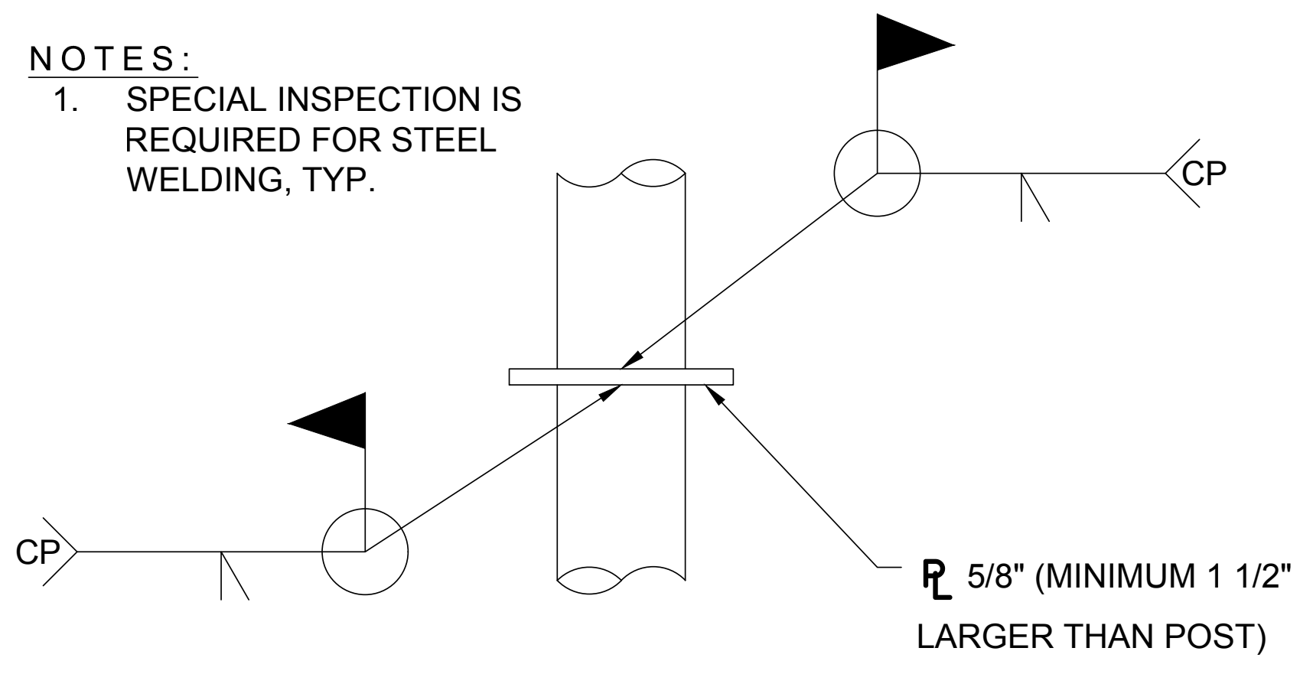
7

CLF - ELEVATION

SCALE: 1/2" = 1'

NOTES:

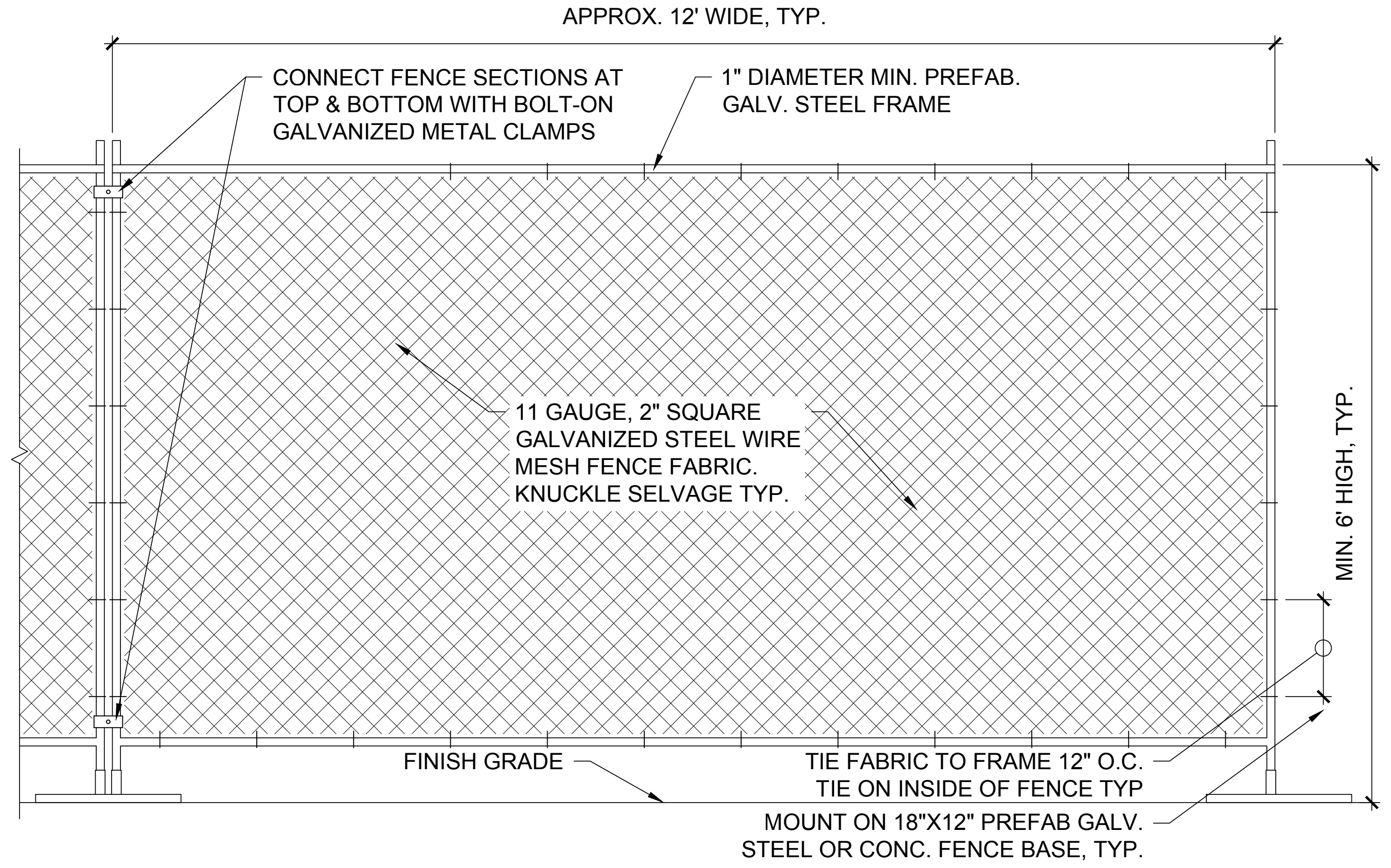
1. SPECIAL INSPECTION IS REQUIRED FOR STEEL WELDING, TYP.


CP
CP
PL 5/8" (MINIMUM 1 1/2" LARGER THAN POST)

5

SPLICE ENLARGEMENT

SCALE: 1" = 1'


APPROX. 12' WIDE, TYP.
CONNECT FENCE SECTIONS AT TOP & BOTTOM WITH BOLT-ON GALVANIZED METAL CLAMPS
1" DIAMETER MIN. PREFAB. GALV. STEEL FRAME
11 GAUGE, 2" SQUARE GALVANIZED STEEL WIRE MESH FENCE FABRIC. KNUCKLE SELVAGE TYP.
MIN. 6' HIGH, TYP.
FINISH GRADE
TIE FABRIC TO FRAME 12" O.C. TIE ON INSIDE OF FENCE TYP
MOUNT ON 18"X12" PREFAB GALV. STEEL OR CONC. FENCE BASE, TYP.

NOTES:

1. LOCATE FENCE WHERE SHOWN ON PLAN. LOCATION MAY BE ADJUSTED SUBJECT TO APPROVAL OF PROJECT INSPECTOR. REMOVE FENCE UPON PROJECT ACCEPTANCE.
2. CONTRACTOR MAY USE CONTINUOUS CHAIN LINK FENCE FABRIC WITH SUPPORT POSTS DRIVEN INTO THE GROUND AS ACCEPTED BY LANDSCAPE ARCHITECT.
3. LOCATE GATES WHERE APPROVED BY PROJECT INSPECTOR.

3

CONSTRUCTION & TREE PROTECTION FENCE

SCALE: 3/4" = 1'

Peter Stanley 2/17/2023 4:52 PM

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APP: 01-120489 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 3/20/2022

ARCHITECT/ ENGINEER

ZFA STRUCTURAL ENGINEERS

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LICENSED LANDSCAPE ARCHITECT
WILLIAM E. FEE
2537
Bill Fee
Signature
12.31.2024
Renewal Date
02.17.2023
Date
STATE OF CALIFORNIA

OWNER

TAMALPAIS UNION HIGH SCHOOL DISTRICT

PROJECT

RED HILL COMMUNITY SPORTS PARK RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

DSA SUBMITTAL

FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE: 02.17.2023
SCALE: AS SHOWN
PROJECT NO: TAM22-01

SHEET TITILE

DETAILS - FENCING AND GATES

SHEET NUMBER

L03.06

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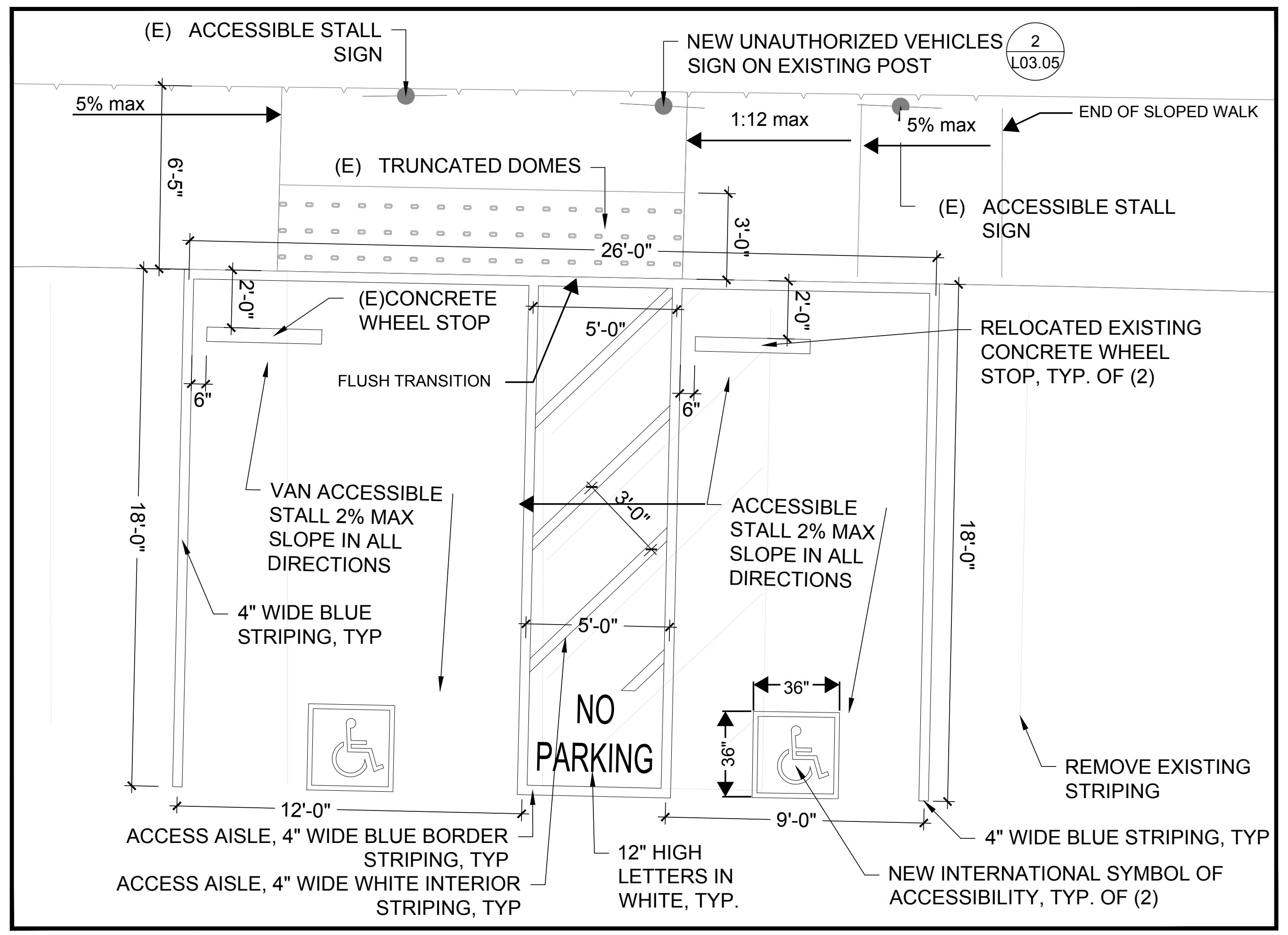
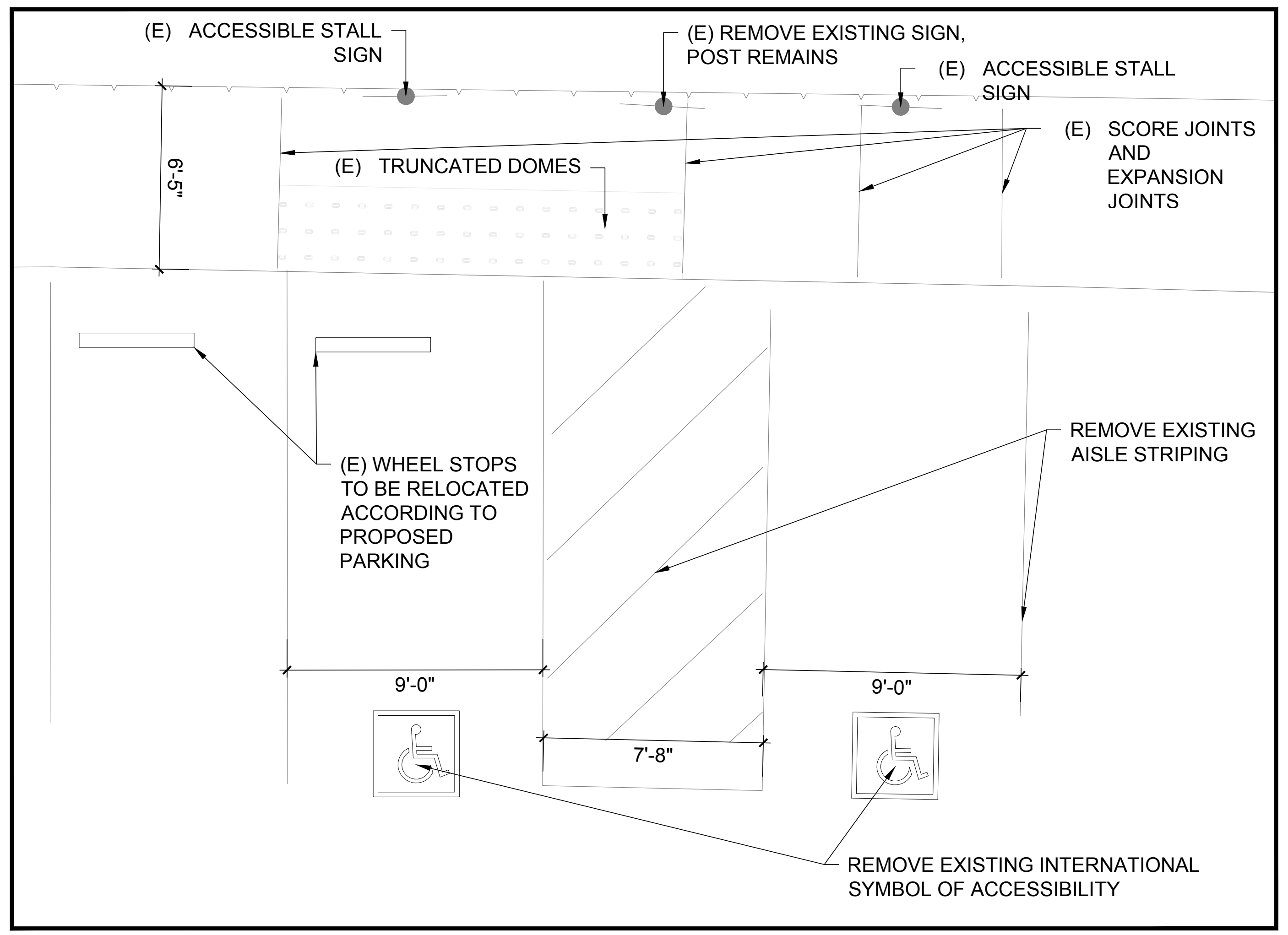

(E) ACCESSIBLE STALL SIGN
NEW UNAUTHORIZED VEHICLES SIGN ON EXISTING POST
2
L03.05
5% max
1:12 max
5% max
END OF SLOPED WALK
6'-5"
(E) TRUNCATED DOMES
26'-0"
3'-0"
(E) ACCESSIBLE STALL SIGN
2'-0"
(E)CONCRETE WHEEL STOP
FLUSH TRANSITION
5'-0"
2'-0"
RELOCATED EXISTING CONCRETE WHEEL STOP, TYP. OF (2)
6"
6"
VAN ACCESSIBLE STALL 2% MAX SLOPE IN ALL DIRECTIONS
3'-0"
ACCESSIBLE STALL 2% MAX SLOPE IN ALL DIRECTIONS
18'-0"
18'-0"
4" WIDE BLUE STRIPING, TYP
5'-0"
36"
NO PARKING
36"
REMOVE EXISTING STRIPING
12'-0"
9'-0"
ACCESS AISLE, 4" WIDE BLUE BORDER STRIPING, TYP
ACCESS AISLE, 4" WIDE WHITE INTERIOR STRIPING, TYP
12" HIGH LETTERS IN WHITE, TYP.
NEW INTERNATIONAL SYMBOL OF ACCESSIBILITY, TYP. OF (2)
4" WIDE BLUE STRIPING, TYP
NORTH

3 PARKING ENLARGEMENT - PROPOSED

SCALE: 1/4" = 1'

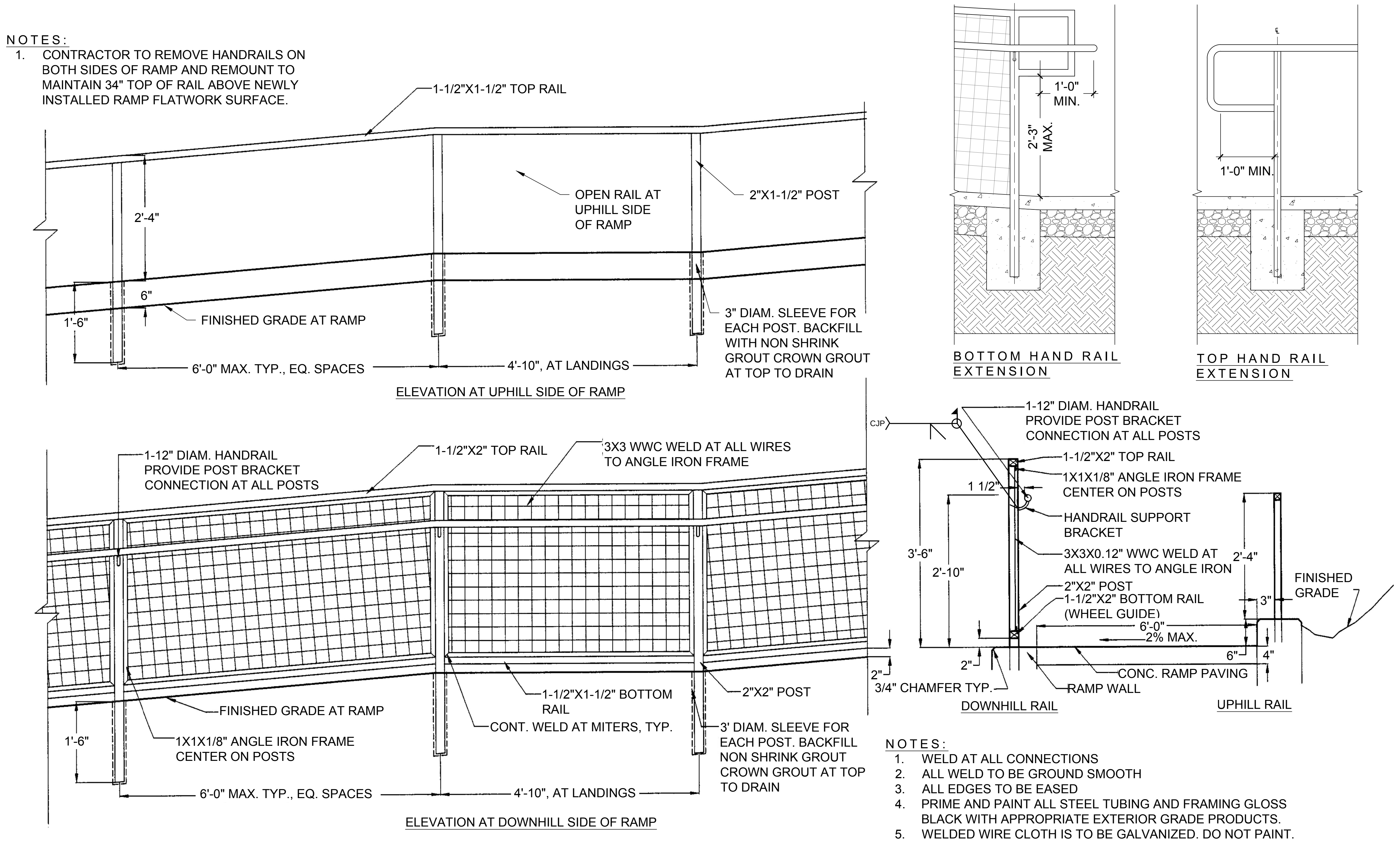

(E) ACCESSIBLE STALL SIGN
(E) REMOVE EXISTING SIGN, POST REMAINS
(E) ACCESSIBLE STALL SIGN
6'-5"
(E) TRUNCATED DOMES
(E) SCORE JOINTS AND EXPANSION JOINTS
(E) WHEEL STOPS TO BE RELOCATED ACCORDING TO PROPOSED PARKING
REMOVE EXISTING AISLE STRIPING
9'-0"
9'-0"
7'-8"
REMOVE EXISTING INTERNATIONAL SYMBOL OF ACCESSIBILITY
NORTH

1 PARKING ENLARGEMENT - EXISTING

SCALE: 1/4" = 1'

NOTES:

1. CONTRACTOR TO REMOVE HANDRAILS ON BOTH SIDES OF RAMP AND REMOUNT TO MAINTAIN 34" TOP OF RAIL ABOVE NEWLY INSTALLED RAMP FLATWORK SURFACE.


1-1/2"X1-1/2" TOP RAIL
OPEN RAIL AT UPHILL SIDE OF RAMP
2"X1-1/2" POST
2'-4"
6"
1'-6"
FINISHED GRADE AT RAMP
3" DIAM. SLEEVE FOR EACH POST. BACKFILL WITH NON SHRINK GROUT CROWN GROUT AT TOP TO DRAIN
6'-0" MAX. TYP., EQ. SPACES
4'-10", AT LANDINGS
ELEVATION AT UPHILL SIDE OF RAMP
1'-0" MIN.
2'-3" MAX.
1'-0" MIN.
BOTTOM HAND RAIL EXTENSION
TOP HAND RAIL EXTENSION
1-12" DIAM. HANDRAIL PROVIDE POST BRACKET CONNECTION AT ALL POSTS
1-1/2"X2" TOP RAIL
3X3 WWC WELD AT ALL WIRES TO ANGLE IRON FRAME
1'-6"
FINISHED GRADE AT RAMP
1X1X1/8" ANGLE IRON FRAME CENTER ON POSTS
1-1/2"X1-1/2" BOTTOM RAIL
CONT. WELD AT MITERS, TYP.
2"X2" POST
3' DIAM. SLEEVE FOR EACH POST. BACKFILL NON SHRINK GROUT CROWN GROUT AT TOP TO DRAIN
6'-0" MAX. TYP., EQ. SPACES
4'-10", AT LANDINGS
ELEVATION AT DOWNHILL SIDE OF RAMP
CJP
1-12" DIAM. HANDRAIL PROVIDE POST BRACKET CONNECTION AT ALL POSTS
1-1/2"X2" TOP RAIL
1 1/2"
1X1X1/8" ANGLE IRON FRAME CENTER ON POSTS
HANDRAIL SUPPORT BRACKET
3'-6"
2'-10"
3X3X0.12" WWC WELD AT ALL WIRES TO ANGLE IRON
2'-4"
2"X2" POST
1-1/2"X2" BOTTOM RAIL (WHEEL GUIDE)
3"
FINISHED GRADE
6'-0"
2% MAX.
6"
4"
2"
2"
3/4" CHAMFER TYP.
CONC. RAMP PAVING
RAMP WALL
DOWNHILL RAIL
UPHILL RAIL

NOTES:

1. WELD AT ALL CONNECTIONS
2. ALL WELD TO BE GROUND SMOOTH
3. ALL EDGES TO BE EASED
4. PRIME AND PAINT ALL STEEL TUBING AND FRAMING GLOSS BLACK WITH APPROPRIATE EXTERIOR GRADE PRODUCTS.
5. WELDED WIRE CLOTH IS TO BE GALVANIZED. DO NOT PAINT.
6. ALL TUBING TO BE 1/8" WALL THICKNESS.

2 EXISTING HANDRAIL

SCALE: 3/4" = 1'

Peter Stanley 2/17/2023 4:52 PM

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12.31.2024
02.17.2023

OWNER
TAMALPAIS UNION HIGH SCHOOL DISTRICT

PROJECT
RED HILL COMMUNITY SPORTS PARK RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

DSA SUBMITTAL

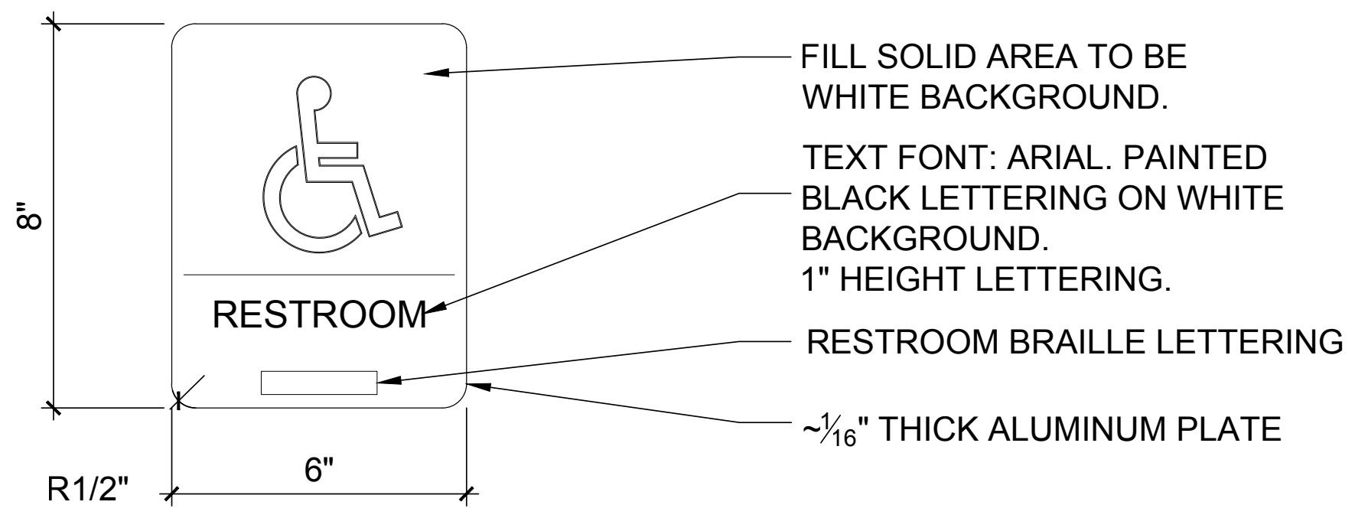
FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE: 02.17.2023
SCALE: AS SHOWN
PROJECT NO: TAM22-01

SHEET TITILE
DETAILS - EXISTING CONDITIONS

SHEET NUMBER
L03.07

NOTES:
1. APPLY GRAFFITI RESISTANT COATING TO EXPOSED SIDES OF SIGN.
2. (1) SIGN TO BE ATTACHED TO EXISTING SIGN POST.


FILL SOLID AREA TO BE WHITE BACKGROUND.
TEXT FONT: ARIAL. PAINTED BLACK LETTERING ON WHITE BACKGROUND. 1" HEIGHT LETTERING.
RESTROOM
RESTROOM BRAILLE LETTERING
~1/16" THICK ALUMINUM PLATE
8"
6"
R1/2"

6 RESTROOM SIGNAGE

SCALE: 3" = 1'

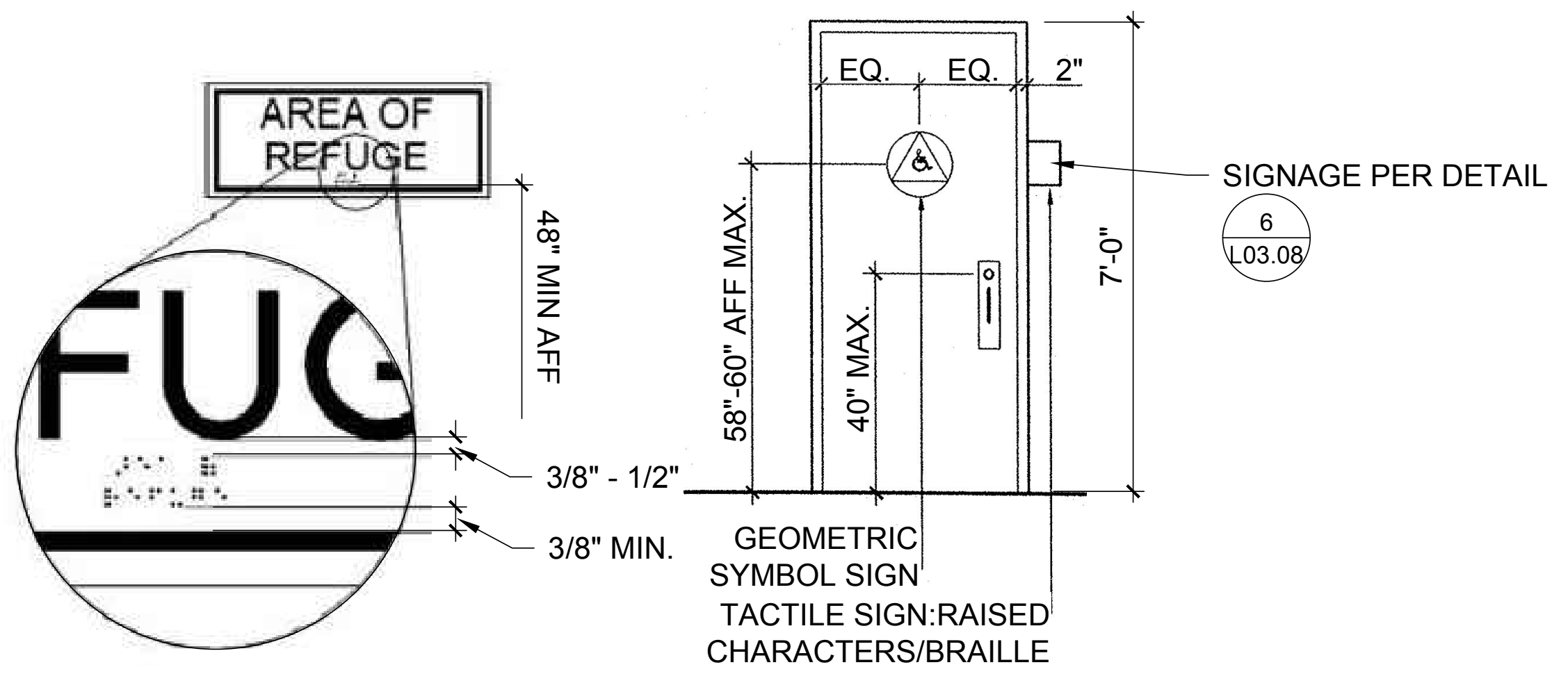

AREA OF REFUGE
FUG
48" MIN AFF
3/8" - 1/2"
3/8" MIN.
EQ.
EQ.
2"
58"-60" AFF MAX.
40" MAX.
7'-0"
SIGNAGE PER DETAIL
6
L03.08
GEOMETRIC SYMBOL SIGN
TACTILE SIGN:RAISED CHARACTERS/BRAILLE

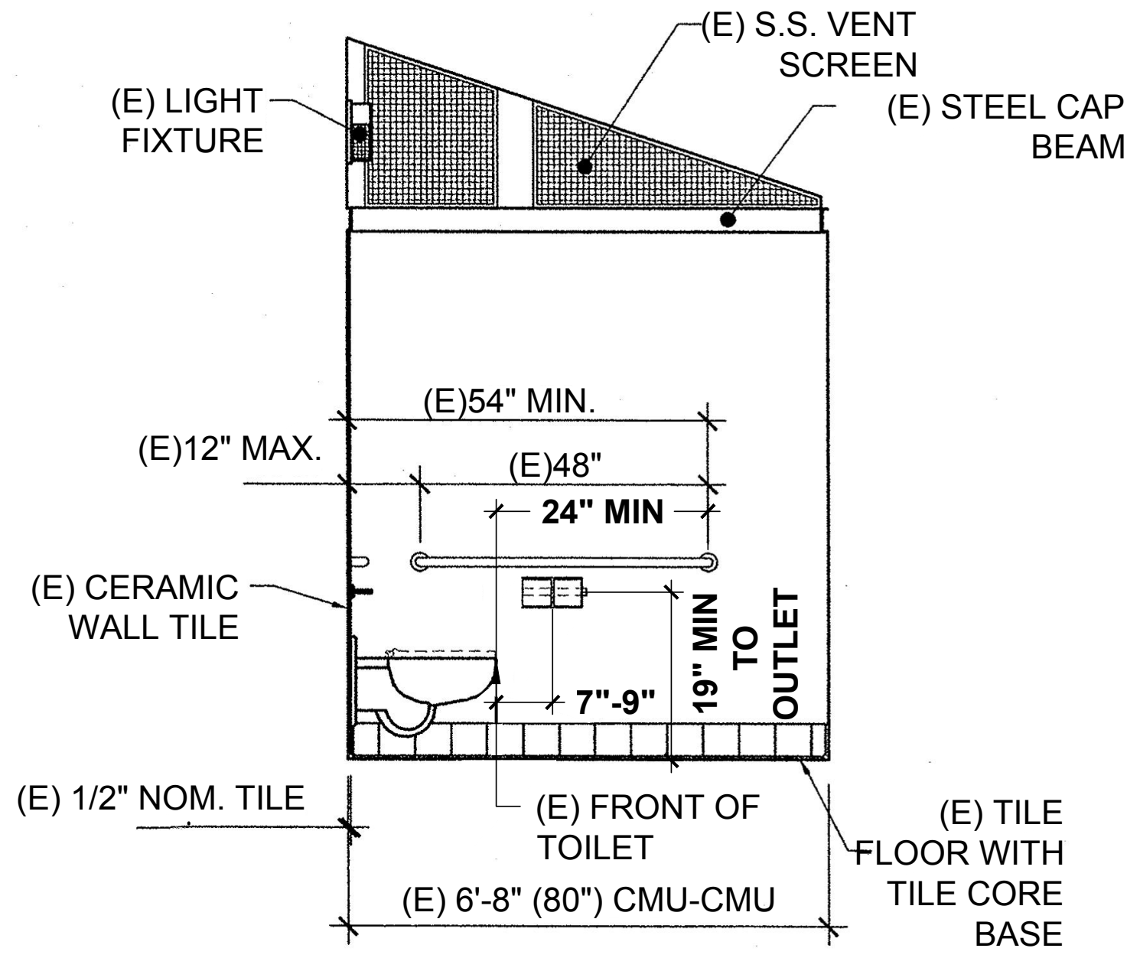
FIGURE 11B-703.3.2
POSITION OF BRAILLE

DOOR SIGNAGE

NOTES:
1. CALIFORNIA RESTROOMS SYMBOLS (CIRCLE/TRIANGLE) ON DOOR LEAFS, INCLUDING ISA IF RESTROOM IS WHEELCHAIR ACCESSIBLE.
2. RESTROOM IDENTIFICATION SIGN ON WALL SHALL INCLUDE RAISED LETTERS AND CALIFORNIA GRADE 2 BRAILLE.

4 RESTROOM SIGNS AT DOORS

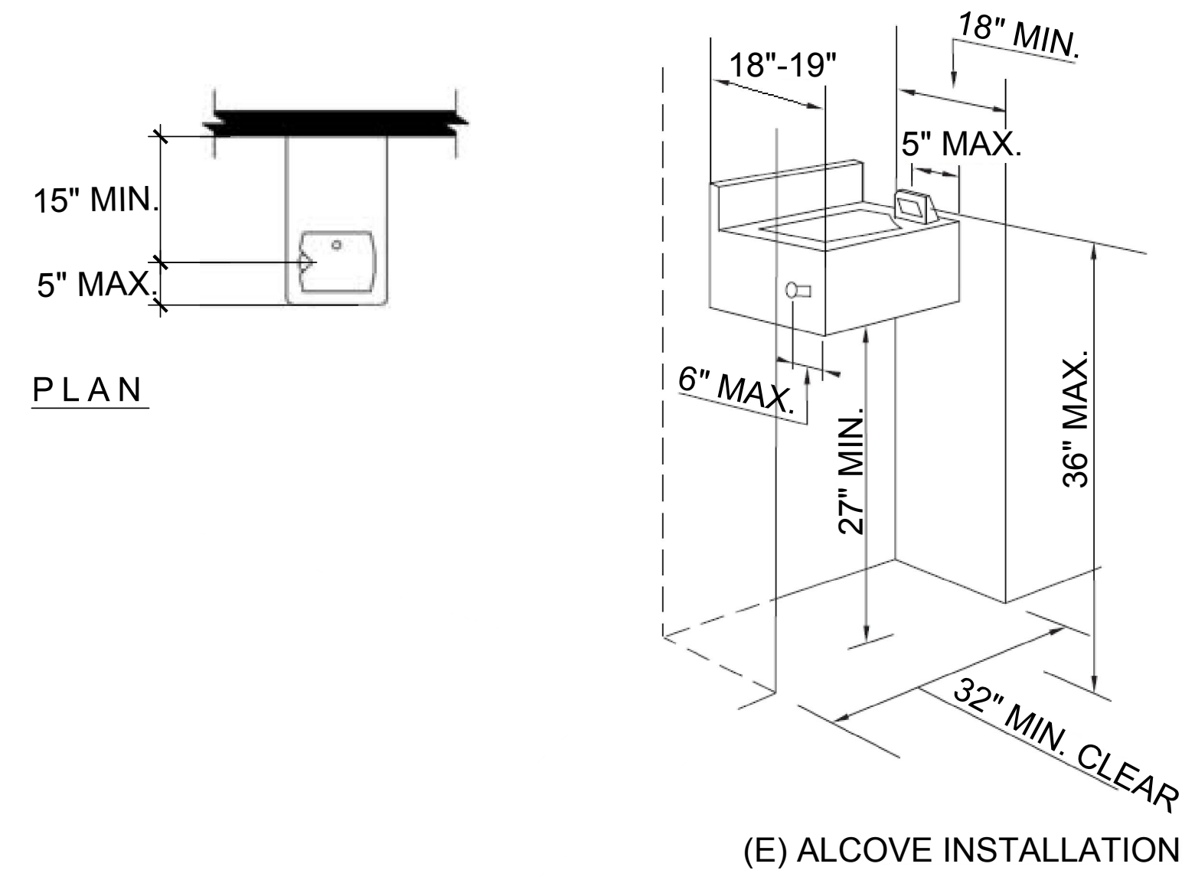
SCALE: 3/8" = 1'


(E) LIGHT FIXTURE
(E) S.S. VENT SCREEN
(E) STEEL CAP BEAM
(E)54" MIN.
(E)12" MAX.
(E)48"
24" MIN
(E) CERAMIC WALL TILE
19" MIN TO OUTLET
7"-9"
(E) 1/2" NOM. TILE
(E) FRONT OF TOILET
(E) TILE FLOOR WITH TILE CORE BASE
(E) 6'-8" (80") CMU-CMU

NOTE:
1. REMOVE AND REMOUNT TOILET PAPER DISPENSER, 7"-9" FROM FACE OF TOILET TO CENTER OF DISPENSER.

1 RESTROOM ELEVATION A

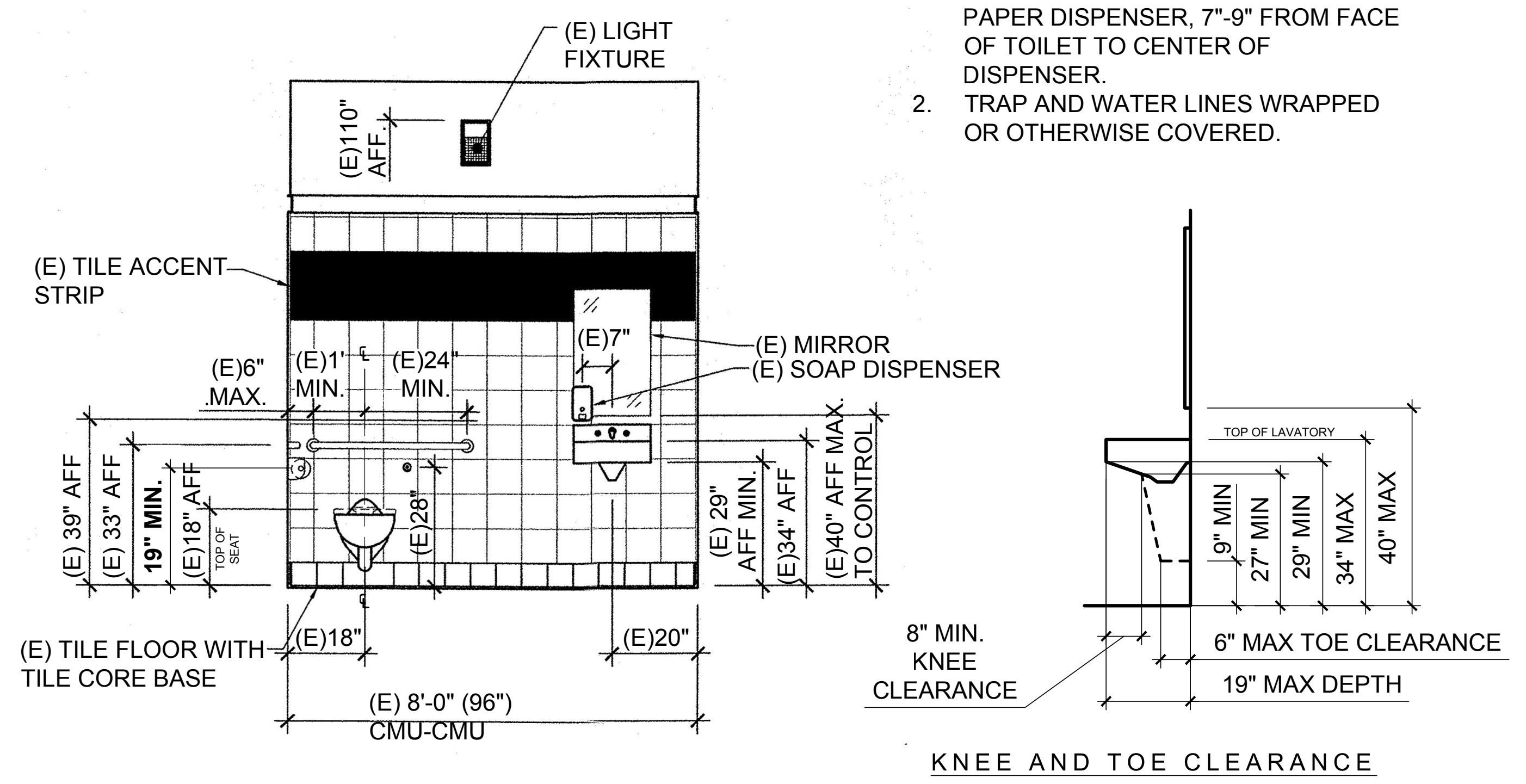
SCALE: 3/8" = 1'


15" MIN.
5" MAX.
PLAN
18"-19"
18" MIN.
5" MAX.
6" MAX.
27" MIN.
36" MAX.
32" MIN. CLEAR
(E) ALCOVE INSTALLATION

5 DRINKING FOUNTAIN

SCALE: NTS

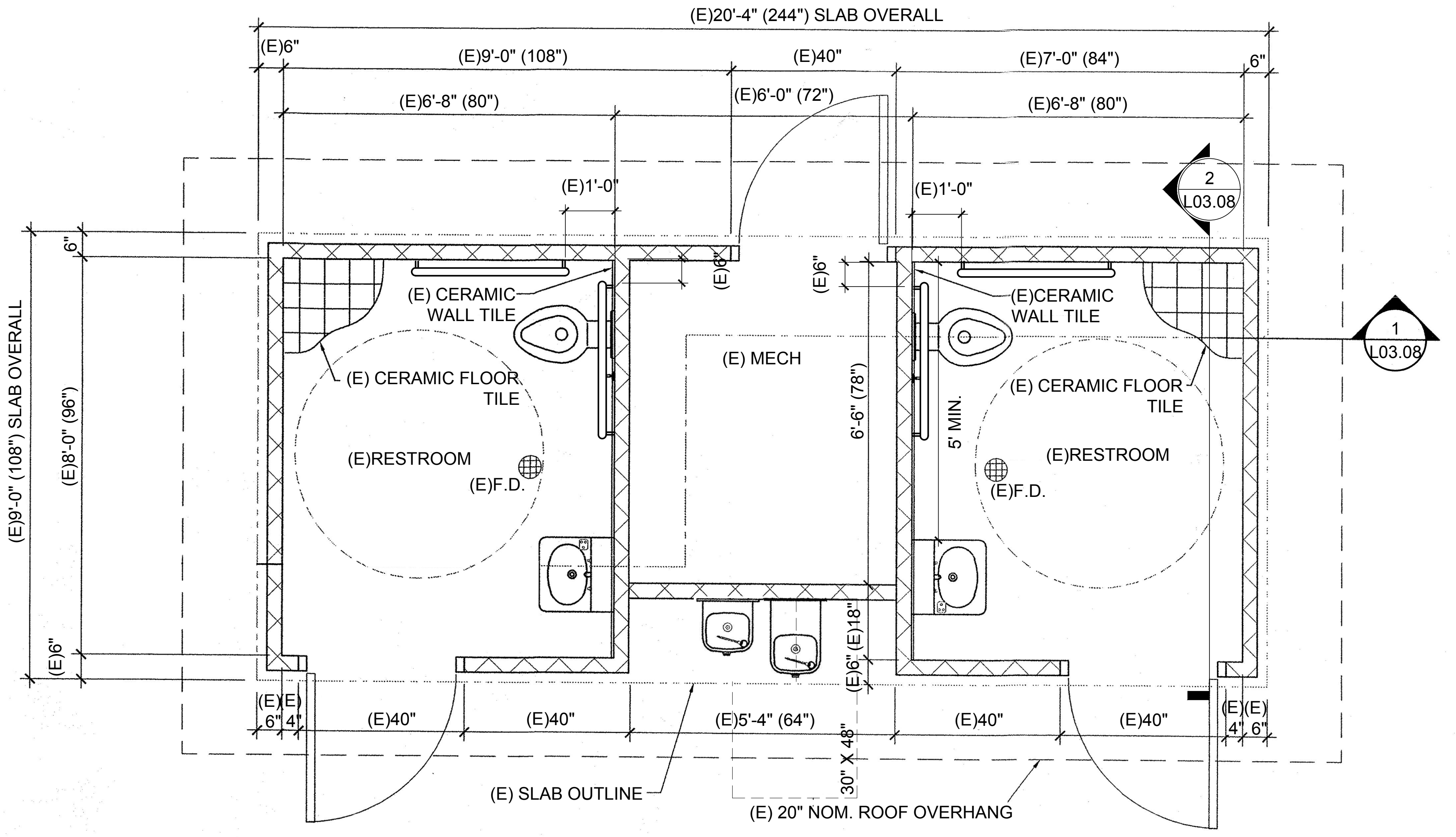
NOTE:
1. REMOVE AND REMOUNT TOILET PAPER DISPENSER, 7"-9" FROM FACE OF TOILET TO CENTER OF DISPENSER.
2. TRAP AND WATER LINES WRAPPED OR OTHERWISE COVERED.


(E) LIGHT FIXTURE
(E)110" AFF.
(E) TILE ACCENT STRIP
(E)7"
(E) MIRROR
(E) SOAP DISPENSER
(E)6" MAX.
(E)1' MIN.
(E)24" MIN.
(E) 39" AFF
(E) 33" AFF
19" MIN.
(E)18" AFF
TOP OF SEAT
(E)28"
(E) 29" AFF MIN.
(E)34" AFF
(E)40" AFF MAX. TO CONTROL
(E) TILE FLOOR WITH TILE CORE BASE
(E)18"
(E)20"
(E) 8'-0" (96") CMU-CMU
TOP OF LAVATORY
9" MIN
27" MIN
29" MIN
34" MAX
40" MAX
8" MIN. KNEE CLEARANCE
6" MAX TOE CLEARANCE
19" MAX DEPTH
KNEE AND TOE CLEARANCE

2 RESTROOM ELEVATION B

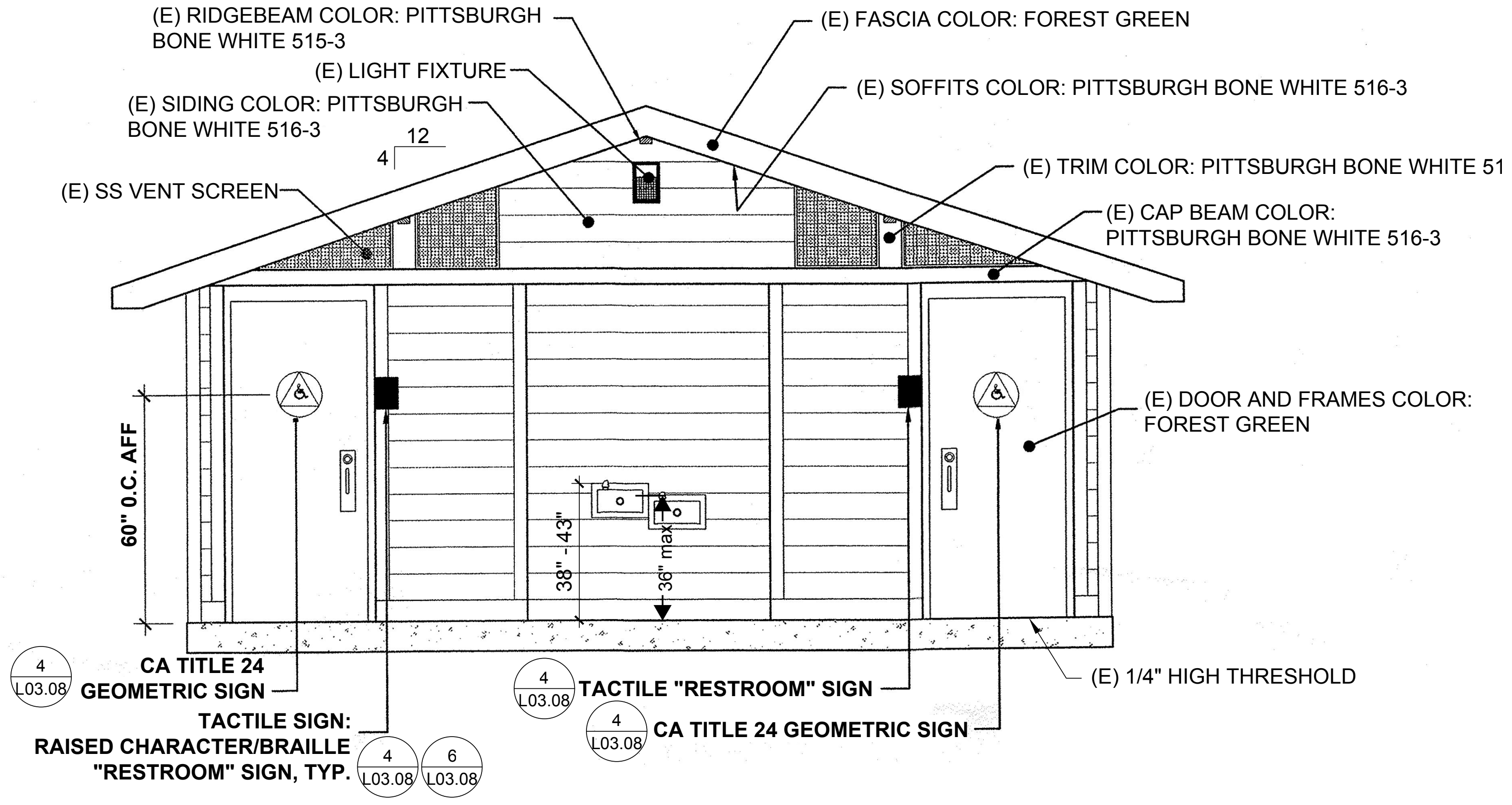
SCALE: 3/8" = 1'

THE RESTROOM IS FOR ACS REVIEW ONLY. IT IS WITHIN 250 SF OF AREA AND ANCILLARY TO ATHLETIC FACILITIES AND IS EXEMPT FROM DSA STRUCTURAL AND FIRE REVIEWS PER CALIFORNIA ADMINISTRATIVE CODE SECTION 4-314.


(E)20'-4" (244") SLAB OVERALL
(E)6"
(E)9'-0" (108")
(E)40"
(E)7'-0" (84")
6"
(E)6'-8" (80")
(E)6'-0" (72")
(E)6'-8" (80")
(E)1'-0"
(E)1'-0"
2
L03.08
1
L03.08
(E) CERAMIC WALL TILE
(E)CERAMIC WALL TILE
(E) CERAMIC FLOOR TILE
(E) CERAMIC FLOOR TILE
(E) MECH
(E)RESTROOM
(E)RESTROOM
(E)F.D.
(E)F.D.
(E)6"
(E)6"
6'-6" (78")
5' MIN.
(E)9'-0" (108") SLAB OVERALL
(E)8'-0" (96")
6"
(E)6"
(E)18"
(E)6"
(E) 6"
(E) 4"
(E)40"
(E)40"
(E)5'-4" (64")
(E)40"
(E)40"
(E) 4"
(E) 6"
30" X 48"
(E) SLAB OUTLINE
(E) 20" NOM. ROOF OVERHANG

7 RESTROOM FLOORPLAN

SCALE: 1/2" = 1'


(E) RIDGEBEAM COLOR: PITTSBURGH BONE WHITE 515-3
(E) LIGHT FIXTURE
(E) SIDING COLOR: PITTSBURGH BONE WHITE 516-3
(E) SS VENT SCREEN
12
4
(E) FASCIA COLOR: FOREST GREEN
(E) SOFFITS COLOR: PITTSBURGH BONE WHITE 516-3
(E) TRIM COLOR: PITTSBURGH BONE WHITE 51
(E) CAP BEAM COLOR: PITTSBURGH BONE WHITE 516-3
(E) DOOR AND FRAMES COLOR: FOREST GREEN
60" O.C. AFF
38" - 43"
36" max
4
L03.08
CA TITLE 24 GEOMETRIC SIGN
TACTILE SIGN: RAISED CHARACTER/BRAILLE "RESTROOM" SIGN, TYP.
4
L03.08
6
L03.08
4
L03.08
TACTILE "RESTROOM" SIGN
4
L03.08
CA TITLE 24 GEOMETRIC SIGN
(E) 1/4" HIGH THRESHOLD

3 EXTERIOR ELEVATION

SCALE: 3/8" = 1'

Know what's below. Call 811 before you dig.

Peter Stanley 2/17/2023 4:53 PM

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WILLIAM E. FEE
2537
12.31.2024
02.17.2023

OWNER

TAMALPAIS UNION
HIGH SCHOOL
DISTRICT

PROJECT

RED HILL
COMMUNITY
SPORTS PARK
RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

DSA SUBMITTAL

FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

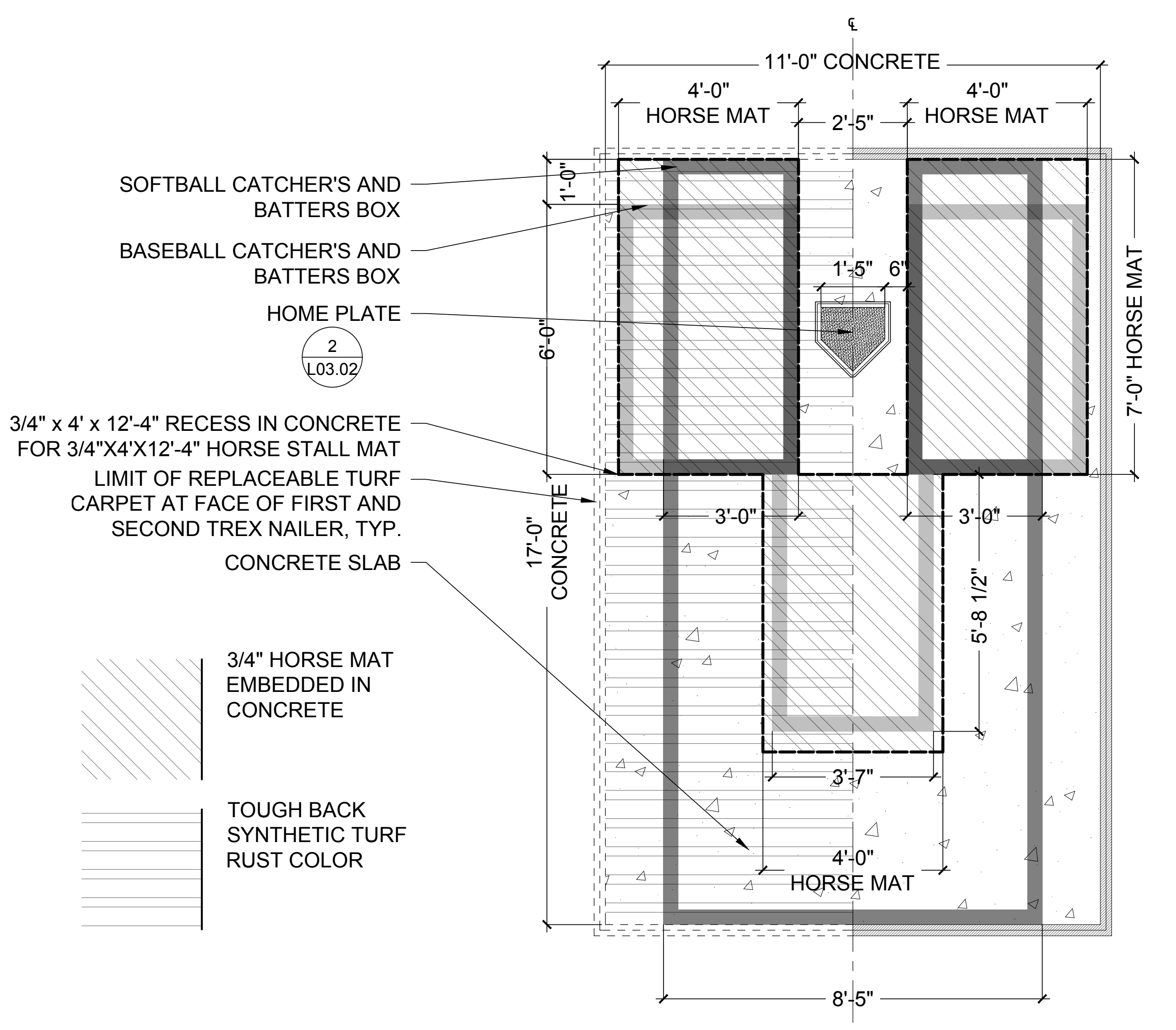
DATE:	02.17.2023
SCALE:	AS SHOWN
PROJECT NO:	TAM22-01

SHEET TITILE

DETAILS - EXISTING
RESTROOM

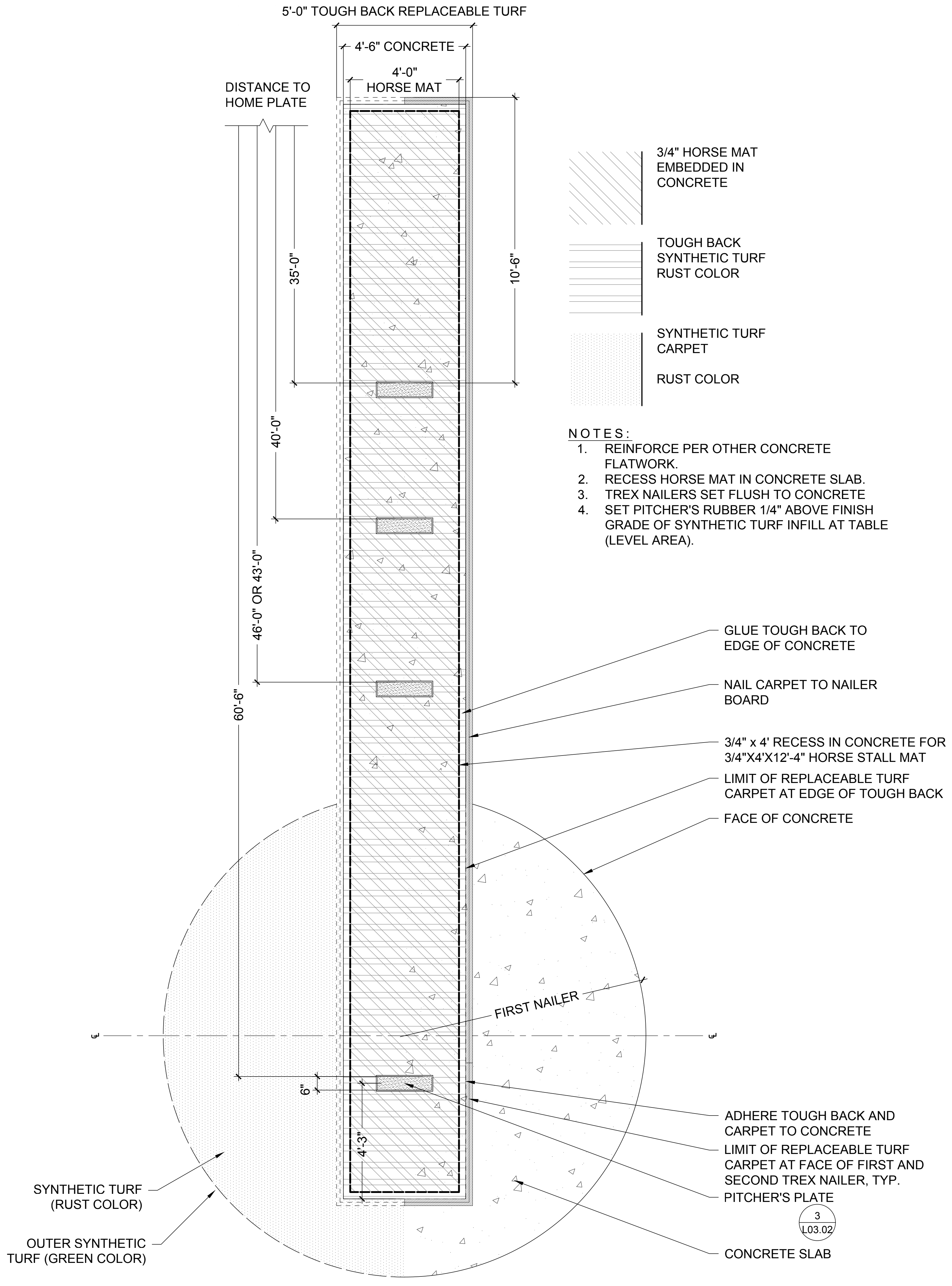
SHEET NUMBER

L03.08


11'-0" CONCRETE
4'-0" HORSE MAT
2'-5"
4'-0" HORSE MAT
SOFTBALL CATCHER'S AND BATTERS BOX
BASEBALL CATCHER'S AND BATTERS BOX
1'-0"
1'-5"
6"
HOME PLATE
2 L03.02
6'-0"
7'-0" HORSE MAT
3/4" x 4' x 12'-4" RECESS IN CONCRETE FOR 3/4"X4'X12'-4" HORSE STALL MAT
LIMIT OF REPLACEABLE TURF CARPET AT FACE OF FIRST AND SECOND TREX NAILER, TYP.
CONCRETE SLAB
3'-0"
3'-0"
17'-0" CONCRETE
5'-8 1/2"
3/4" HORSE MAT EMBEDDED IN CONCRETE
TOUGH BACK SYNTHETIC TURF RUST COLOR
3'-7"
4'-0" HORSE MAT
8'-5"

2 SOFTBALL AND BASEBALL CATCHER'S AND BATTER'S BOX TURF SYSTEM

SCALE: 3/8" = 1'

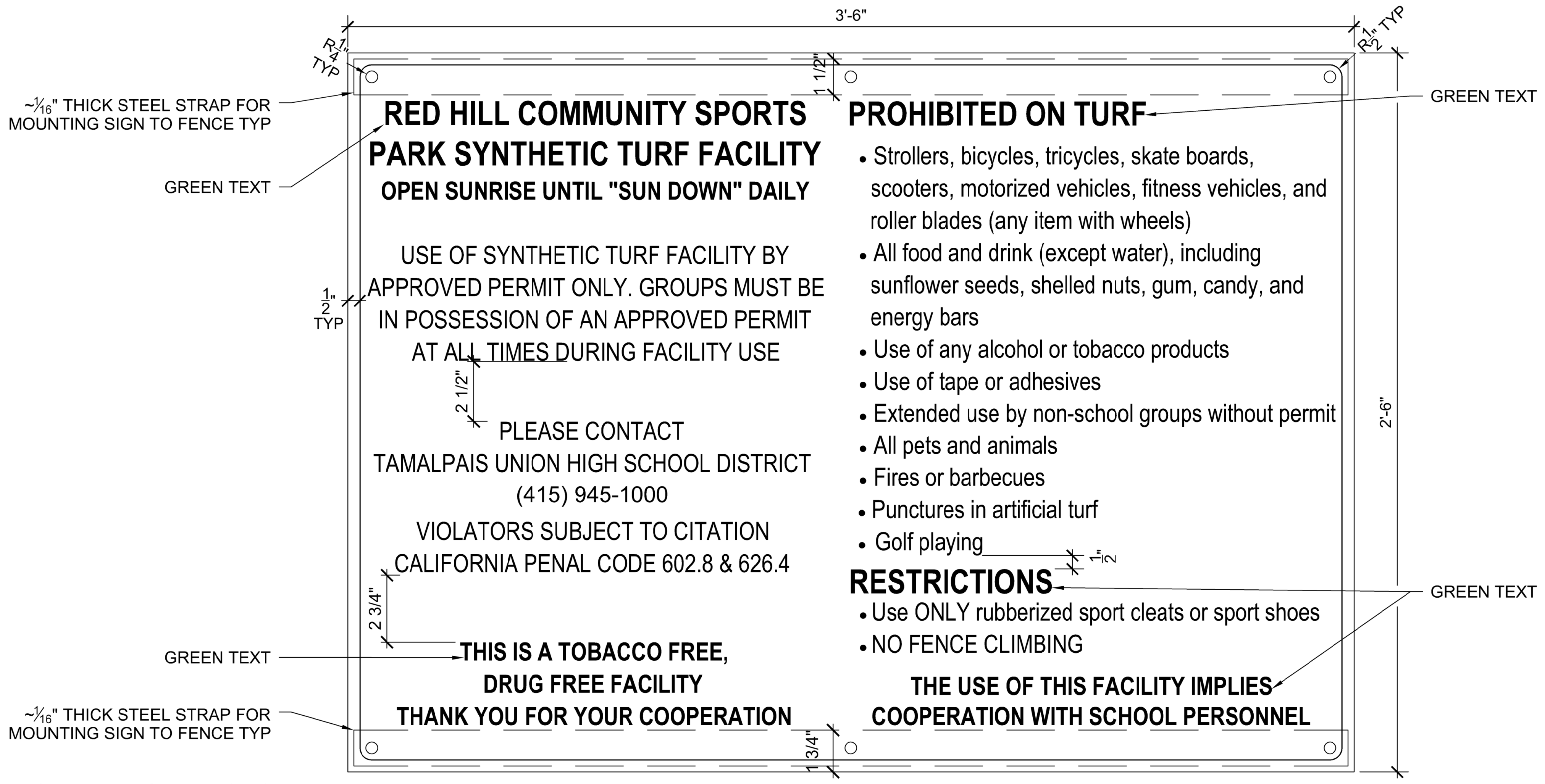

5'-0" TOUGH BACK REPLACEABLE TURF
4'-6" CONCRETE
4'-0" HORSE MAT
DISTANCE TO HOME PLATE
35'-0"
10'-6"
40'-0"
46'-0" OR 43'-0"
60'-6"
3/4" HORSE MAT EMBEDDED IN CONCRETE
TOUGH BACK SYNTHETIC TURF RUST COLOR
SYNTHETIC TURF CARPET
RUST COLOR
GLUE TOUGH BACK TO EDGE OF CONCRETE
NAIL CARPET TO NAILER BOARD
3/4" x 4' RECESS IN CONCRETE FOR 3/4"X4'X12'-4" HORSE STALL MAT
LIMIT OF REPLACEABLE TURF CARPET AT EDGE OF TOUGH BACK
FACE OF CONCRETE
FIRST NAILER
6"
4'-3"
ADHERE TOUGH BACK AND CARPET TO CONCRETE
LIMIT OF REPLACEABLE TURF CARPET AT FACE OF FIRST AND SECOND TREX NAILER, TYP.
PITCHER'S PLATE
3 L03.02
CONCRETE SLAB
SYNTHETIC TURF (RUST COLOR)
OUTER SYNTHETIC TURF (GREEN COLOR)

NOTES:

1. REINFORCE PER OTHER CONCRETE FLATWORK.
2. RECESS HORSE MAT IN CONCRETE SLAB.
3. TREX NAILERS SET FLUSH TO CONCRETE
4. SET PITCHER'S RUBBER 1/4" ABOVE FINISH GRADE OF SYNTHETIC TURF INFILL AT TABLE (LEVEL AREA).

1 SOFTBALL AND BASEBALL PITCHING SYSTEM

SCALE: 3/8" = 1'


3'-6"
R 1/4" TYP
R 1/2" TYP
1 1/2"
~1/16" THICK STEEL STRAP FOR MOUNTING SIGN TO FENCE TYP
GREEN TEXT
GREEN TEXT
1/2" TYP
2 1/2"
2'-6"
1/2"
GREEN TEXT
2 3/4"
GREEN TEXT
~1/16" THICK STEEL STRAP FOR MOUNTING SIGN TO FENCE TYP
1 3/4"

RED HILL COMMUNITY SPORTS PARK SYNTHETIC TURF FACILITY

OPEN SUNRISE UNTIL "SUN DOWN" DAILY

USE OF SYNTHETIC TURF FACILITY BY APPROVED PERMIT ONLY. GROUPS MUST BE IN POSSESSION OF AN APPROVED PERMIT AT ALL TIMES DURING FACILITY USE

PLEASE CONTACT
TAMALPAIS UNION HIGH SCHOOL DISTRICT
(415) 945-1000

VIOLATORS SUBJECT TO CITATION
CALIFORNIA PENAL CODE 602.8 & 626.4

THIS IS A TOBACCO FREE, DRUG FREE FACILITY
THANK YOU FOR YOUR COOPERATION

PROHIBITED ON TURF

- Strollers, bicycles, tricycles, skate boards, scooters, motorized vehicles, fitness vehicles, and roller blades (any item with wheels)
- All food and drink (except water), including sunflower seeds, shelled nuts, gum, candy, and energy bars
- Use of any alcohol or tobacco products
- Use of tape or adhesives
- Extended use by non-school groups without permit
- All pets and animals
- Fires or barbecues
- Punctures in artificial turf
- Golf playing

RESTRICTIONS

- Use ONLY rubberized sport cleats or sport shoes
- NO FENCE CLIMBING

THE USE OF THIS FACILITY IMPLIES COOPERATION WITH SCHOOL PERSONNEL

3 REGULATORY SIGN TURF

SCALE: 3" = 1'

NOTES:

1. TEXT FONT-ARIAL NARROW. BLACK PAINTED LETTERING ON WHITE BACKGROUND (EXCEPT WHERE NOTED AS GREEN). VINYL LETTERS NOT ACCEPTABLE.
2. .080 GAUGE ALUMINUM SUBSTRATE. PRE-DRILL FOR (6) SIGN BOLTS AT CORNERS & MID POINT. SUBMIT SHOP DRAWINGS FOR REVIEW.
3. SEE PLAN FOR QUANTITY & LOCATION INFO.
4. SECURE WITH NON-RUSTING, VANDAL-RESISTANT FASTENERS COMPLETE.
5. APPLY GRAFFITI RESISTANT COATING TO EXPOSED SIDES OF SIGN.
6. TEXT SHOWN FOR BID PURPOSES ONLY. FINAL TEXT TO BE PROVIDED BY DISTRICT.
7. FOR SIGN MOUNTING, SEE DETAIL. 1 L03.05
8. MOUNT SIGN 5' OC ABOVE FINISHED FLOOR.

Peter Stanley 2/17/2023 4:53 PM

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WILLIAM E. FEE
2537
Bill Fee
Signature
12.31.2024
Renewal Date
02.17.2023
Date

OWNER
TAMALPAIS UNION HIGH SCHOOL DISTRICT

PROJECT
RED HILL COMMUNITY SPORTS PARK RENOVATION
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CONTEXT MAP

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FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE: 02.17.2023
SCALE: AS SHOWN
PROJECT NO: TAM22-01

SHEET TITILE
DETAILS - SYNTHETIC TURF

SHEET NUMBER
L03.09

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
AD	AREA DRAIN
ADA	AMERICANS WITH DISABILITIES ACT
APPROX	APPROXIMATE
ARV	AIR RELEASE VALVE
ASB	AGGREGATE SUB-BASE
BC	BEGINNING OF CURVE
BCO	BURIED CLEANOUT. SEE LANDSCAPE PLANS
BCR	BEGIN CURB RETURN
BF	BLIND FLANGE
BFP	BACKFLOW PREVENTER
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BLOWOFF
BOV	BLOWOFF VALVE
BVC	BEGIN VERTICAL CURVE
BW	BACK OF WALK
CB	CATCH BASIN
C&G	CURB & GUTTER
CI	CURB INLET
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CONC	CONCRETE
COTG	CLEANOUT TO GRADE
CR	CURB RETURN
DF	DRINKING FOUNTAIN
DI	DROP INLET; DUCTILE IRON
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DS	DOWNSPOUT
DWG	DRAWING
E	ELECTRIC
(E)	EXISTING, EAST
EC	END OF CURVE
ECR	END OF CURB RETURN
EG	EXISTING GRADE
EG30.25	EXISTING GRADE ELEVATION
EL, ELEV	ELEVATION
ELEC	ELECTRIC
EP	EDGE OF PAVEMENT
EVA	EMERGENCY VEHICLE ACCESS
EX/EXIST.	EXISTING
(F)	FUTURE
FC, F/C	FACE OF CURB
FA	FIRE ALARM
FF	FINISHED FLOOR
FF 30.85	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
FG30.35	FINISHED GRADE ELEVATION
FH	FIRE HYDRANT
FL	FLOW LINE
FL35.50	FLOWLINE ELEVATION
FT	FEET
G	GROUND; GAS
G27.35	GROUND ELEVATION
GB	GRADE BREAK
GND	GROUND
GR	GRATE
GV	GATE VALVE, GAS VALVE
HB	HOSE BIB
HDPE	HIGH-DENSITY POLYETHYLENE
HGL	HYDRAULIC GRADE LINE
HOR.	HORIZONTAL
HP	HIGH POINT
H&T	HUB & TACK
HV	HIGH VOLTAGE
INV	INVERT
IE	INVERT ELEVATION
IRR	IRRIGATION
JT	JOINT TRENCH
LAT	LATERAL
L	LENGTH
LF	LINEAR FEET
LG	LIP OF GUTTER
LG30.75	LIP OF GUTTER ELEVATION
LOW	LIMIT OF WORK
LP	LOW POINT
LT	LEFT

ABBREVIATION	DESCRIPTION
MAX	MAXIMUM
MH	MANHOLE
MID	MIDDLE
MIN	MINIMUM
M-M	MONUMENT TO MONUMENT
(N)	NORTH; NEW
"NO., #"	NUMBER
NTS	NOT TO SCALE
O.C.E.W.	ON CENTER EACH WAY
P	PAVEMENT
P28.65	PAVEMENT ELEVATION
PCC	POINT OF COMPOUND CURVE or PORTLAND CEMENT CONCRETE
PCP	PLAIN CONCRETE PIPE
PERF	PERFORATED PIPE
PG&E	PACIFIC GAS AND ELECTRIC CO.
PL, P/L	PROPERTY LINE
POT	PATH OF TRAVEL
PRC	POINT OF REVERSE CURVE
P.S.E.	PUBLIC SERVICES EASEMENT
PT	POINT
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
R29.65	RAMP ELEVATION
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RE	RIM ELEVATION
RET	CURB RETURN
RET. WALL	RETAINING WALL
RT	RIGHT
RW	RECLAIMED WATER
R/W	RIGHT OF WAY
S	SLOPE
(S)	SOUTH
SD	STORM DRAIN
SDCB	STORM DRAIN CATCH BASIN
SDCO	STORM DRAIN CLEANOUT
SDMH	STORM DRAIN MANHOLE
SDWK	SIDEWALK
SG	SUBGRADE
SG30.25	SUBGRADE ELEVATION
SHT.	SHEET
S.L.P.	SEE LANDSCAPE PLANS
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEANOUT
SSD	SEE STRUCTURAL DRAWINGS
SSMH	SANITARY SEWER MANHOLE
ST	SYNTHETIC TURF; STREET
ST22.35	TOP OF SYNTHETIC TURF ELEVATION
STA	STATION
STD	STANDARD
(T)	TOTAL
TB	TOP OF BULKHEAD, TOP OF BERM/DIKE
TB29.04	TOP OF BULKHEAD / BERM ELEVATION
TC	TOP OF CURB
TC28.95	TOP OF CURB ELEVATION
TD30.23	TRENCH DRAIN GRATE ELEVATION
TEMP	TEMPORARY
TW	TOP OF WALL
TW36.37	TOP OF WALL ELEVATION
TYP.	TYPICAL
UD, U/D	UNDERDRAIN
U.O.N.	UNLESS OTHERWISE NOTED
VERT.	VERTICAL
VCP	VITRIFIED CLAY PIPE
VIF, V.I.F.	VERIFY IN FIELD
W	WATER
(W)	WEST
W/	WITH
WM	WATER METER
WSP	WELDED STEEL PIPE
WV	WATER VALVE
1/2 PT	HALF POINT OF CURB RETURN AT F/C

LEGEND

——95——	CONTOUR LINE
—x—x—x—	FENCE
—v—v—v—	EXISTING WALL
⌖	LIGHT
—●—	SIGN
☐	UTILITY VAULT
▤	CURB INLET
◎	AREA DRAIN

NOTE:

1. CONTRACTOR SHALL CALL UNDERGROUND SERVICES ALERT AT 811 PRIOR TO ANY EXCAVATION.
2. CONTRACTOR SHALL POTHOLE EXISTING UTILITIES TO CONFIRM LOCATION AND ELEVATION FOR ALL UTILITIES TO BE PROTECTED IN PLACE OR INTENDED FOR BEING CONNECTED TO.

I. GENERAL NOTES

1. ALL IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THE CURRENT CITY ORDINANCE CODE, STATE STANDARD SPECIFICATIONS AND CITY AND COUNTY STANDARD PLANS. THE IMPROVEMENTS ARE SUBJECT TO THE INSPECTION AND APPROVAL OF THE PUBLIC WORKS DEPARTMENT. CONTACT PUBLIC WORKS CONSTRUCTION INSPECTION AT LEAST TWO (2) WORKING DAYS PRIOR TO THE START OF ANY WORK TO ARRANGE FOR INSPECTION.
2. THE CONTRACTOR SHALL REQUEST STAKING SERVICES FROM THE SURVEYOR AT LEAST TWO (2) WORKING DAYS PRIOR TO ARRANGING AN INSPECTION FROM THE PUBLIC WORKS DEPARTMENT.
3. ALL REVISIONS TO THESE PLANS MUST BE REVIEWED AND APPROVED IN WRITING BY THE DESIGN ENGINEER AND DSA PRIOR TO CONSTRUCTION OF AFFECTED ITEMS. ALL REVISIONS SHALL BE ACCURATELY SHOWN ON REVISED PLANS AND SIGNED BY DSA.
4. THE CONTRACTOR SHALL RESTORE ALL WALLS, FENCES, SERVICES, UTILITIES, IMPROVEMENTS OR FEATURES OF WHATEVER NATURE WHICH ARE DAMAGED, DUE TO THE CONTRACTOR'S WORK, TO THEIR PREVIOUS CONDITION.
5. NOTIFY UNDERGROUND SERVICE ALERT (NOW 811) AT LEAST THREE (3) WORKING DAYS PRIOR TO ANY EXCAVATION. THE USA AUTHORIZATION NUMBER SHALL BE KEPT AT THE JOB SITE.
6. ALL STREET MONUMENTS AND OTHER PERMANENT MONUMENTS DISTURBED DURING THE PROCESS OF CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR AT HIS SOLE EXPENSE BEFORE ACCEPTANCE OF THE IMPROVEMENTS BY THE CITY ENGINEER.
7. IF CONSTRUCTION OPERATIONS IMPACT ANY PUBLIC STREET INCLUDING SIDEWALKS, THE CONTRACTOR SHALL PREPARE A TRAFFIC AND SAFETY CONTROL PLAN AND OBTAIN APPROVAL FROM THE CITY TRAFFIC ENGINEER AT LEAST 10 DAYS BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PROVIDE FLAGMEN, CONES, OR BARRICADES, AS NECESSARY, TO CONTROL TRAFFIC AND PREVENT HAZARDOUS CONDITIONS PER THE WORK AREA TRAFFIC CONTROL HANDBOOK.
8. EXISTING PEDESTRIAN WALKWAYS, BIKE PATHS, AND HANDICAP ACCESS PATHWAYS SHALL BE MAINTAINED DURING CONSTRUCTION TO THE SATISFACTION OF THE CITY.
9. TRENCHES SHALL NOT BE LEFT OPEN OVERNIGHT IN EXISTING CITY STREET, SCHOOL, OR PARK AREAS. CONTRACTOR SHALL BACKFILL TRENCHES, OR PLACE STEEL PLATING AND/OR HOT-MIX ASPHALT AS REQUIRED TO PROTECT OPEN TRENCHES AT THE END OF EVERY WORK DAY.
10. EXCAVATIONS SHALL BE ADEQUATELY SHORED IN CONFORMANCE WITH OSHA, THE CITY OF SAN ANSELMO, THE COUNTY OF MARIN, AND THE GEOTECHNICAL REPORT SO THAT ALL EXISTING IMPROVEMENTS OF ANY KIND WILL BE FULLY PROTECTED FROM DAMAGE. ANY DAMAGE RESULTING FROM SHORING, BRACING, AND SHEATHING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND HE SHALL COMPLETE NECESSARY REPAIRS OR RECONSTRUCTION AT HIS OWN EXPENSE. WHERE THE EXCAVATION FOR A CONDUIT TRENCH, AND/OR STRUCTURE IS FIVE (5) FEET OR MORE IN DEPTH, THE CONTRACTOR SHALL PROVIDE SHEATHING, SHORING AND BRACING IN CONFORMANCE WITH THE APPLICABLE CONSTRUCTION SAFETY ORDERS OF THE DIVISION OF INDUSTRIAL SAFETY OF THE STATE OF CALIFORNIA. THE CONTRACTOR SHALL COMPLY WITH OSHA REQUIREMENTS AT ALL TIMES.
11. PRIOR TO PLACING CURB, SIDEWALK, ASPHALT CONCRETE, SUBBASE OR BASE MATERIAL, ALL UNDERGROUND FACILITIES WITHIN THE RIGHT-OF-WAY SHALL BE INSTALLED, BACKFILL COMPLETED, AND THE PUBLIC WORKS DEPARTMENT'S CONSTRUCTION DIVISION NOTIFIED BY EACH OF THE UTILITY COMPANIES HAVING FACILITIES WITHIN THE WORK AREA THAT THE UTILITY INSTALLATION HAS SATISFACTORILY PASSED ACCEPTANCE TESTS.
12. THE CONTRACTOR SHALL PROVIDE DUST CONTROL FOR THE ENTIRE PROJECT SITE AT ALL TIMES. THE SITE SHALL BE SPRINKLED AS NECESSARY TO PREVENT DUST NUISANCE. IN THE EVENT THE CONTRACTOR NEGLECTS TO USE ADEQUATE MEASURES TO CONTROL DUST, THE CITY OR DISTRICT RESERVES THE RIGHT TO TAKE WHATEVER MEASURES NECESSARY TO CONTROL DUST AND CHARGE THE COST TO THE CONTRACTOR.
13. DURING CONSTRUCTION, THE CITY STREETS SHALL BE CLEANED AS OFTEN AS REQUIRED TO REMOVE ANY ACCUMULATION OF MUD AND DEBRIS RESULTING FROM THIS CONSTRUCTION. IF IMPORT OR EXPORT OF DIRT IS NECESSARY, THE CONTRACTOR SHALL OBTAIN AN APPROVAL FOR THE HAULING ROUTE AND A TRUCK ROUTE PERMIT FROM THE CITY ENGINEERING DIVISION. THE HAULING ROUTES SHALL BE STRICTLY ADHERED TO BY THE CONTRACTOR AND ALL SUBCONTRACTORS.
14. IF, DURING CONSTRUCTION, ARCHAEOLOGICAL REMAINS ARE ENCOUNTERED, CONSTRUCTION IN THE VICINITY SHALL BE HALTED, AN ARCHAEOLOGIST CONSULTED, AND THE CITY PLANNING DEPARTMENT NOTIFIED. IF, IN THE OPINION OF THE ARCHAEOLOGIST, THE REMAINS ARE SIGNIFICANT, MEASURES, AS MAY BE REQUIRED BY THE PLANNING DIRECTOR, SHALL BE TAKEN TO PROTECT THEM.
15. THE CONTRACTOR SHALL POST 24 HR EMERGENCY TELEPHONE NUMBERS FOR POLICE, FIRE, AMBULANCE, AND THOSE AGENCIES RESPONSIBLE FOR MAINTENANCE OF UTILITIES IN THE VICINITY OF THE JOB SITE.
16. THE CONTRACTOR IS RESPONSIBLE FOR CONFORMING TO EXISTING STREETS, SURROUNDING LANDSCAPE AND OTHER IMPROVEMENTS WITH A SMOOTH TRANSITION IN PAVING, CURBS, GUTTERS, SIDEWALKS, GRADING (3:1 SLOPE MAXIMUM), ETC. AND TO AVOID ANY ABRUPT OR APPARENT CHANGES IN GRADES OR CROSS SLOPES, LOW SPOTS OR HAZARDOUS CONDITIONS.
17. SHOULD IT APPEAR THAT THE WORK TO BE DONE, OR ANY MATTER RELATIVE THERETO, IS NOT SUFFICIENTLY DETAILED OR EXPLAINED ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE OWNER'S REPRESENTATIVE FOR SUCH FURTHER EXPLANATIONS AS MAY BE NECESSARY.
18. ORDER OF WORK FOR STREET & PARKING LOT IMPROVEMENTS:
    A. ROUGH GRADING
    B. STORM DRAIN & DRAINAGE STRUCTURES
    C. OTHER UTILITY INSTALLATION
    D. CURB & SIDEWALK
    E. PAVEMENT CONSTRUCTION
    F. REMOVE CONFLICTING STRIPING, PAVEMENT MARKER AND
    G. COMPLETE FINAL STRIPING, PAVEMENT MARKERS AND SIGN INSTALLATION
19. THE CONTRACTOR SHALL DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING, AND SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL LOCAL, STATE, AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS.
20. THE CONTRACTOR IS REQUIRED BY STATE LAW TO ACTIVELY RESEARCH THE WORK AREA PRIOR TO CONSTRUCTION, AND TO REFERENCE MONUMENTS AND REPLACE THOSE DAMAGED OR REMOVED DURING CONSTRUCTION.
21. GATHER ALL CONSTRUCTION DEBRIS ON A DAILY BASIS AND PLACE IT IN A COVERED DUMPSTER OR OTHER CONTAINER WHICH IS EMPTIED OR REMOVED ON A WEEKLY BASIS. A SECONDARY CONTAINMENT BERM SHALL BE CONSTRUCTED AROUND THE DUMPSTER. WHEN APPROPRIATE, INSTALL TARPS ON THE GROUND TO COLLECT FALLEN DEBRIS OR SPLATTERS THAT COULD CONTRIBUTE TO STORM WATER POLLUTION.
22. REMOVE ALL DEBRIS FROM THE SIDEWALK, STREET, PAVEMENT, AND STORM DRAIN SYSTEM ADJOINING THE PROJECT SITE DAILY OR AS REQUIRED BY THE CITY INSPECTOR. DURING WET WEATHER, AVOID DRIVING VEHICLES OFF PAVED AREAS.
23. CREATE A CONTAINED AND COVERED AREA ON THE SITE FOR THE STORAGE OF BAGS OF CEMENT, PAINTS, FLAMMABLE ITEMS, OILS, FERTILIZERS, PESTICIDES OR ANY OTHER MATERIAL USED ON THE PROJECT SITE THAT HAS THE POTENTIAL FOR BEING DISCHARGED TO THE STORM DRAIN SYSTEM.
24. NEVER CLEAN MACHINERY, TOOLS, BRUSHES, ETC. OR RINSE CONTAINERS INTO A STREET, GUTTER, STORM DRAIN OR STREAM.
25. CONCRETE/GUNITE SUPPLY TRUCKS OR CONCRETE/PLASTERS OR SIMILAR FINISHING OPERATIONS SHALL NOT DISCHARGE WASH WATER INTO STREET GUTTERS OR DRAINS OR ON-SITE STORM DRAINAGE SYSTEMS.
26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING ANY RODENT, MOSQUITO, OR OTHER PEST PROBLEM DUE TO CONSTRUCTION ACTIVITIES.
27. DURING CONSTRUCTION, NOISE CONTROL AND CONSTRUCTION TRAFFIC MITIGATION MEASURES WITHIN RESIDENTIAL NEIGHBORHOODS OR ON PUBLIC STREETS SHALL BE TAKEN TO REDUCE NOISE & USE OF PUBLIC STREETS BY CONSTRUCTION TRAFFIC AS DIRECTED BY THE CITY.
28. FLAG PERSONS SHALL BE REQUIRED FOR ANY AND ALL CLOSURES OF TRAFFIC LANES. PRIOR TO ANY LANE OR ROAD CLOSURE, 24-HOUR WRITTEN NOTICE AND APPROVAL FROM THE POLICE DEPARTMENT MUST BE OBTAINED. CONTACT PD TRAFFIC UNIT OR WATCH COMMANDER FOR APPROVALS. ANY LANE OR ROAD CLOSURE MUST BE CONDUCTED DURING NON-COMMUTE HOURS (9:00 AM TO 3:00 PM)
29. ALL ASBESTOS CEMENT PIPING ENCOUNTERED SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER FOR DIRECTION AS TO PROPER DISPOSAL.
30. THE CONTRACTOR SHALL PROVIDE TO THE OWNER'S REPRESENTATIVE VIDEOS AND/OR PHOTOGRAPHS OF THE EXISTING CONDITIONS, PARTICULARLY EDGE CONDITIONS, OF THE PROJECT SITE PRIOR TO ANY WORK BEING PERFORMED IN ORDER TO DOCUMENT ANY POTENTIAL CLAIMS THAT MAY ARISE DURING OR AT THE END OF CONSTRUCTION. UNDOCUMENTED CONDITIONS REQUIRING REPAIR SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CORRECT AT NO ADDITIONAL COST TO THE CONTRACT.
31. NO DEBRIS BOXES OR BUILDING MATERIALS SHALL BE STORED ON THE STREET.

II. LAYOUT NOTES

1. ALL CURB RETURN RADII AND CURB DATA ARE TO TOP OF CURB UNLESS OTHERWISE NOTED.
2. ALL IMPROVEMENTS ARE TO BE STAKED BY A REGISTERED LAND SURVEYOR. COORDINATES ARE TO BE DETERMINED BY THE LAND SURVEYOR USING A DIGITAL COPY OF THE PLANS WHICH SHALL BE PROVIDED TO THEM.

III. EXISTING CONDITIONS

1. AERIAL TOPOGRAPHIC SURVEY PROVIDED BY TETRA TECH ON 6/10/2022. SUPPLEMENTAL TOPO PERFORMED BY BOHLEY CONSULTING ON 6/12/2022.
2. INFORMATION REGARDING EXISTING SUBSURFACE IMPROVEMENTS AND UTILITIES SHOWN ON THESE PLANS WAS TAKEN FROM SURFACE EVIDENCE AND IS NOT MEANT TO BE A FULL CATALOG OF EXISTING CONDITIONS. CONTRACTOR SHALL CONDUCT FIELD INVESTIGATIONS AS REQUIRED TO VERIFY THE LOCATION AND ELEVATION OF ALL EXISTING SUBSURFACE IMPROVEMENTS AND UTILITIES (WHETHER SHOWN ON THESE PLANS OR NOT) PRIOR TO THE COMMENCEMENT OF WORK. CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS IN THE FIELD AND INFORMATION SHOWN ON THESE PLANS.
3. ELEVATIONS AND LOCATIONS OF ALL EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO START OF ANY CONSTRUCTION.
4. NO BOUNDARY OR EASEMENTS ARE SHOWN HEREON.

IV. GRADING

1. ELEVATIONS SHOWN AT CONFORM LOCATIONS ARE APPROXIMATE. WHERE EXISTING GRADES DO NOT PRECLUDE IT, ENSURE CROSS SLOPES UNDER 2% AND LONGITUDINAL SLOPES UNDER 5% ARE PROVIDED. WHERE CONFORMS ARE AT A LEVEL LANDING, THEY SHALL BE UNDER 2% IN ALL DIRECTIONS WHENEVER POSSIBLE. ENSURE POSITIVE DRAINAGE AT ALL TIMES.
2. ALL GRADING WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER, AND IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, CITY ORDINANCES, AND THE UNIFORM BUILDING CODE.
3. NO WORK SHALL BE PERFORMED ON SATURDAYS, SUNDAYS, OR HOLIDAYS, OR OUTSIDE THE HOURS OF 7:30 A.M. TO 6:00 P.M., WITHOUT THE SPECIFIC AUTHORIZATION OF THE CITY ENGINEER. ALL GASOLINE POWERED CONSTRUCTION EQUIPMENT SHALL BE EQUIPPED WITH AN OPERATING MUFFLER OR BAFFLING SYSTEM AS ORIGINALLY PROVIDED BY THE MANUFACTURER, AND NO MODIFICATION TO THESE SYSTEMS IS PERMITTED.
4. THE APPLICANT SHALL POST HOURS OF OPERATION AND PHONE NUMBERS FOR NOISE COMPLAINTS. SAID NOTICE SHALL BE VISIBLE FROM AN AREA ACCESSIBLE TO THE PUBLIC.
5. THE GEOTECHNICAL ENGINEER SHALL BE NOTIFIED AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCEMENT OF GRADING OPERATIONS.
6. THE GEOTECHNICAL ENGINEER SHALL BE PRESENT AT THE SITE DURING GRADING OPERATIONS AND SHALL PERFORM ALL TESTING DEEMED NECESSARY. THE GEOTECHNICAL ENGINEER SHALL OBSERVE ALL GRADING OPERATIONS AND IDENTIFY THOSE WITH DEFICIENT CONDITIONS WITH RECOMMENDED CORRECTIVE MEASURES TO THE CONTRACTOR AND THE DISTRICT REPRESENTATIVE.
7. ALL GRADING SHALL BE INSPECTED AND TESTED BY A QUALIFIED GEOTECHNICAL ENGINEER OR UNDER THEIR DIRECTION. THE GEOTECHNICAL ENGINEER SHALL INSPECT AND TEST THE EXCAVATION, PLACEMENT OF FILLS, BACKFILLING AND COMPACTION OF TRENCHES. THE GEOTECHNICAL ENGINEER SHALL SUBMIT SOILS REPORTS AS REQUIRED AND WILL DETERMINE THE SUITABILITY OF ANY FILL MATERIAL. UPON COMPLETION OF GRADING OPERATIONS THE GEOTECHNICAL ENGINEER SHALL STATE IN A REPORT TO THE CITY THAT THE INSPECTIONS AND TESTS WERE MADE BY HIM/HER OR UNDER HIS/HER SUPERVISION AND THAT IN HIS/HER OPINION ALL EMBANKMENTS AND EXCAVATIONS WERE CONSTRUCTED IN ACCORDANCE WITH THE APPROVED GRADING PLANS AND APPROVED REVISIONS THERETO AND ALL EMBANKMENTS AND EXCAVATIONS ARE ACCEPTABLE FOR THEIR INTENDED USE.

V. UTILITIES

1. CONTRACTOR SHALL PROTECT ALL UTILITIES FROM DAMAGE DURING COMPACTION OF ROADWAY OR CONCRETE SUBGRADE AND PRIOR TO PLACEMENT OF THE FINAL PAVEMENT SECTION.
2. ADJUST ALL PROPOSED AND EXISTING UTILITY VAULTS, MANHOLES, ETC. TO FINISHED GRADE WITHIN THE WORK AREA.

VI. RECORD DRAWINGS

1. CONTRACTOR SHALL KEEP ACCURATE RECORD DRAWINGS WHICH SHOW THE FINAL LOCATION, ELEVATION, AND DESCRIPTION OF ALL WORK. CONTRACTOR SHALL ALSO NOTE THE LOCATION AND ELEVATION OF ANY EXISTING IMPROVEMENTS ENCOUNTERED. RECORDS SHALL BE "REDLINED" ON A SET OF PRINTED CONSTRUCTION PLANS OR BY PDF MARKUPS.

VII. STATEMENT OF RESPONSIBILITY

1. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONALS HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONALS.

VIII. UNAUTHORIZED CHANGES AND USES

1. THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

IX. EROSION CONTROL

1. EROSION CONTROL FACILITIES SHALL BE INSTALLED COMPLETE AND MAINTAINED THROUGHOUT THE PERIOD OF CONSTRUCTION ACTIVITY. THE NAME OF THE PERSON RESPONSIBLE FOR THE DAILY MAINTENANCE OF THESE FACILITIES SHALL BE ON RECORD WITH THE CONSTRUCTION MANAGER ALONG WITH A PHONE NUMBER WHERE HE/SHE CAN BE REACHED 24 HOURS A DAY. THESE FACILITIES SHALL CONTROL AND CONTAIN EROSION CAUSED SILT DEPOSITS AND PROVIDE FOR THE SAFE DISCHARGE OF SILT-FREE STORM WATER INTO EXISTING STORM DRAIN FACILITIES. DESIGN OF THESE FACILITIES MUST BE APPROVED AND UPDATED EACH YEAR PRIOR TO SEPTEMBER 30.

X. BENCHMARK AND BASIS OF BEARINGS

1. BENCHMARK: CUT CROSS AT TOP OF ADA RAMP IN PARKING LOT ON SHAW DRIVE. ELEVATION 93.98 (NAVD88).
2. BASIS OF BEARINGS: HORIZONTAL CONTROL IS BASED ON A GPS SURVEY USING RTK METHODS, ADJUSTED WITH OPUS. CALIFORNIA COORDINATE SYSTEM, ZONE 3, NAD83 (2011) (EPOCH: 2010.0000).

CIVIL ENGINEER

BOHLEY CONSULTING
111 NORTH MARKET STREET, SUITE 300
SAN JOSE, CA 95113 (408) 265-1600
WWW.BOHLEYCONSULTING.COM

BY: Craig Overbo 2/15/2023
CRAIG OVERBO RCE 60301 DATE

SHEET INDEX

C0.01	GENERAL NOTES
C1.01	GRADING PLAN
C1.02	GRADING PLAN
C2.01	EROSION CONTROL PLAN
C2.02	EROSION CONTROL DETAILS

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-120489 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 3/20/2022

ARCHITECT/ ENGINEER
ZFA STRUCTURAL ENGINEERS

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santa rosa ca 95404 707.526.0992
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STAMP

RCE 60301

OWNER
TAMALPAIS UNION HIGH SCHOOL DISTRICT

PROJECT
RED HILL COMMUNITY SPORTS PARK RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE: 02.15.2023
SCALE: AS SHOWN
PROJECT NO: TAM22-01

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
C0.01

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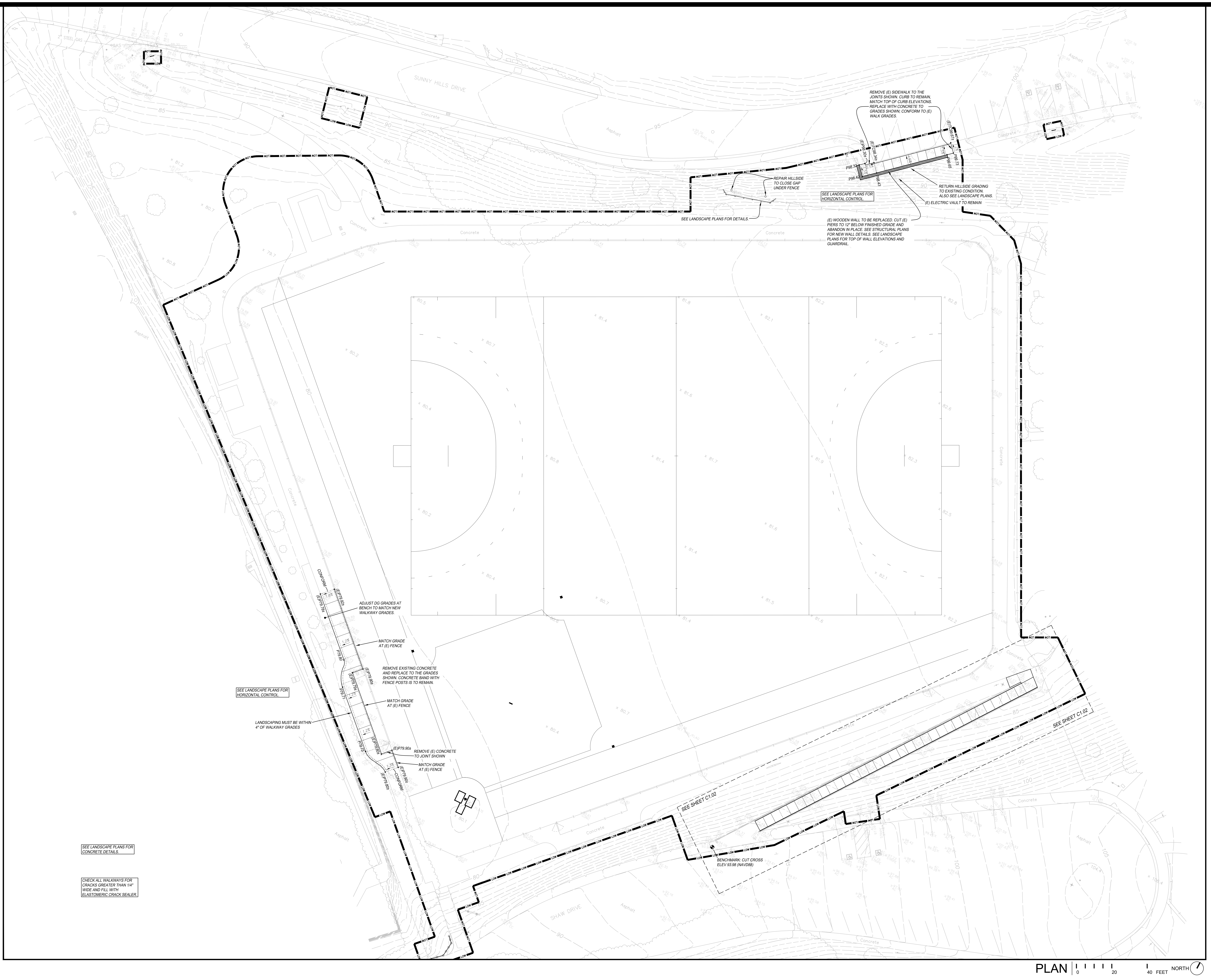
2/15/2023 F:\DATA\ACAD\2022\15\CAD\C-TITLE.DWG



REMOVE (E) SIDEWALK TO THE JOINTS SHOWN. CURB TO REMAIN, MATCH TOP OF CURB ELEVATIONS. REPLACE WITH CONCRETE TO GRADES SHOWN; CONFORM TO (E) WALK GRADES.

REPAIR HILLSIDE TO CLOSE GAP UNDER FENCE

SEE LANDSCAPE PLANS FOR HORIZONTAL CONTROL.

SEE LANDSCAPE PLANS FOR DETAILS.

RETURN HILLSIDE GRADING TO EXISTING CONDITION. ALSO SEE LANDSCAPE PLANS.

(E) ELECTRIC VAULT TO REMAIN

(E) WOODEN WALL TO BE REPLACED. CUT (E) PIERS TO 12" BELOW FINISHED GRADE AND ABANDON IN PLACE. SEE STRUCTURAL PLANS FOR NEW WALL DETAILS. SEE LANDSCAPE PLANS FOR TOP OF WALL ELEVATIONS AND GUARDRAIL.

ADJUST DG GRADES AT BENCH TO MATCH NEW WALKWAY GRADES.

MATCH GRADE AT (E) FENCE

REMOVE EXISTING CONCRETE AND REPLACE TO THE GRADES SHOWN. CONCRETE BAND WITH FENCE POSTS IS TO REMAIN.

SEE LANDSCAPE PLANS FOR HORIZONTAL CONTROL.

MATCH GRADE AT (E) FENCE

LANDSCAPING MUST BE WITHIN 4" OF WALKWAY GRADES

REMOVE (E) CONCRETE TO JOINT SHOWN

MATCH GRADE AT (E) FENCE

BENCHMARK: CUT CROSS ELEV 93.98 (NAVD88)

SEE LANDSCAPE PLANS FOR CONCRETE DETAILS.

CHECK ALL WALKWAYS FOR CRACKS GREATER THAN 1/4" WIDE AND FILL WITH ELASTOMERIC CRACK SEALER.

811 Know what's below. Call 811 before you dig.

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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-120489 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 3/20/2022

ARCHITECT/ ENGINEER

ZFA STRUCTURAL ENGINEERS
1212 fourth street | suite z
santa rosa ca 95404
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zfa job no. 20400

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STAMP

DESIGN TEAM

BOHLEY CONSULTING
111 NORTH MARKET STREET, SUITE 300
SAN JOSE, CA 95113 (408) 265-1600
WWW.BOHLEYCONSULTING.COM

STAMP

CRAIG G. OVERBO
RCE 60301
CIVIL

OWNER

TAMALPAIS UNION
HIGH SCHOOL
DISTRICT

PROJECT

RED HILL
COMMUNITY
SPORTS PARK
RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

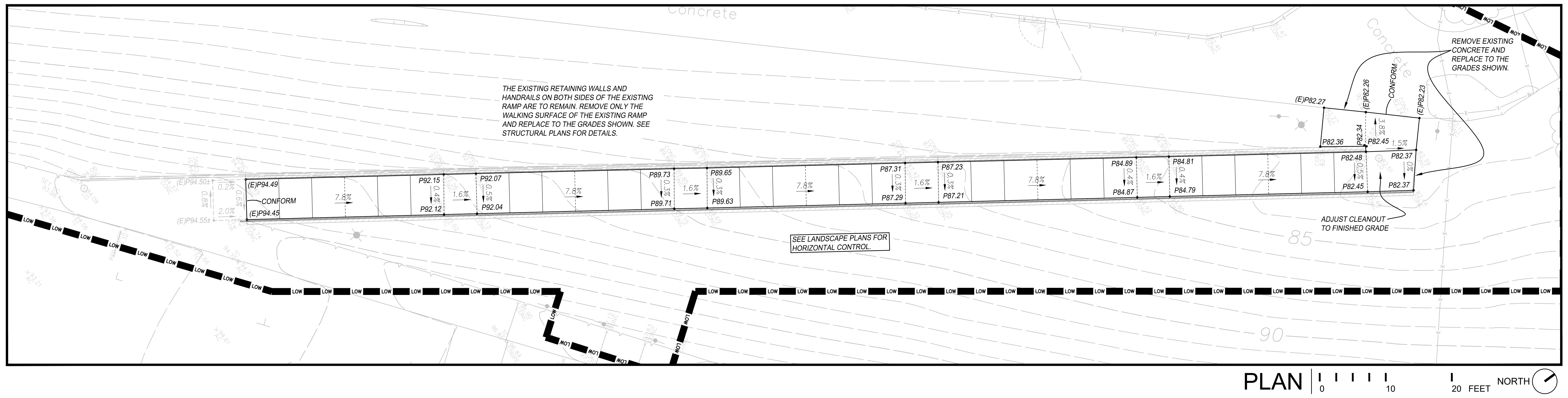
DATE: 02.15.2023
SCALE: AS SHOWN
PROJECT NO: TAM22-01

SHEET TITLE

GRADING PLAN

SHEET NUMBER

C1.01


THE EXISTING RETAINING WALLS AND HANDRAILS ON BOTH SIDES OF THE EXISTING RAMP ARE TO REMAIN. REMOVE ONLY THE WALKING SURFACE OF THE EXISTING RAMP AND REPLACE TO THE GRADES SHOWN. SEE STRUCTURAL PLANS FOR DETAILS.
REMOVE EXISTING CONCRETE AND REPLACE TO THE GRADES SHOWN.
SEE LANDSCAPE PLANS FOR HORIZONTAL CONTROL.
ADJUST CLEANOUT TO FINISHED GRADE
CONFORM
(E)P94.50±
(E)P94.55±
(E)P94.49
(E)P94.45
0.2%
2.0%
0.8%
0.6%
7.8%
P92.15
P92.12
0.4%
1.6%
P92.07
P92.04
0.5%
P89.73
P89.71
0.3%
P89.65
P89.63
P87.31
P87.29
P87.23
P87.21
P84.89
P84.87
P84.81
P84.79
(E)P82.27
(E)P82.26
(E)P82.23
P82.36
P82.34
P82.45
3.8%
1.5%
P82.48
P82.37
0%
Concrete
85
90
LOW
0
10
20
FEET
NORTH

PLAN

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 01-120489 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 3/20/2022

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CONTEXT MAP

#	DESCRIPTION	DATE

FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE:	02.15.2023
SCALE:	AS SHOWN
PROJECT NO:	TAM22-01

SHEET TITLE

GRADING PLAN

SHEET NUMBER

C1.02

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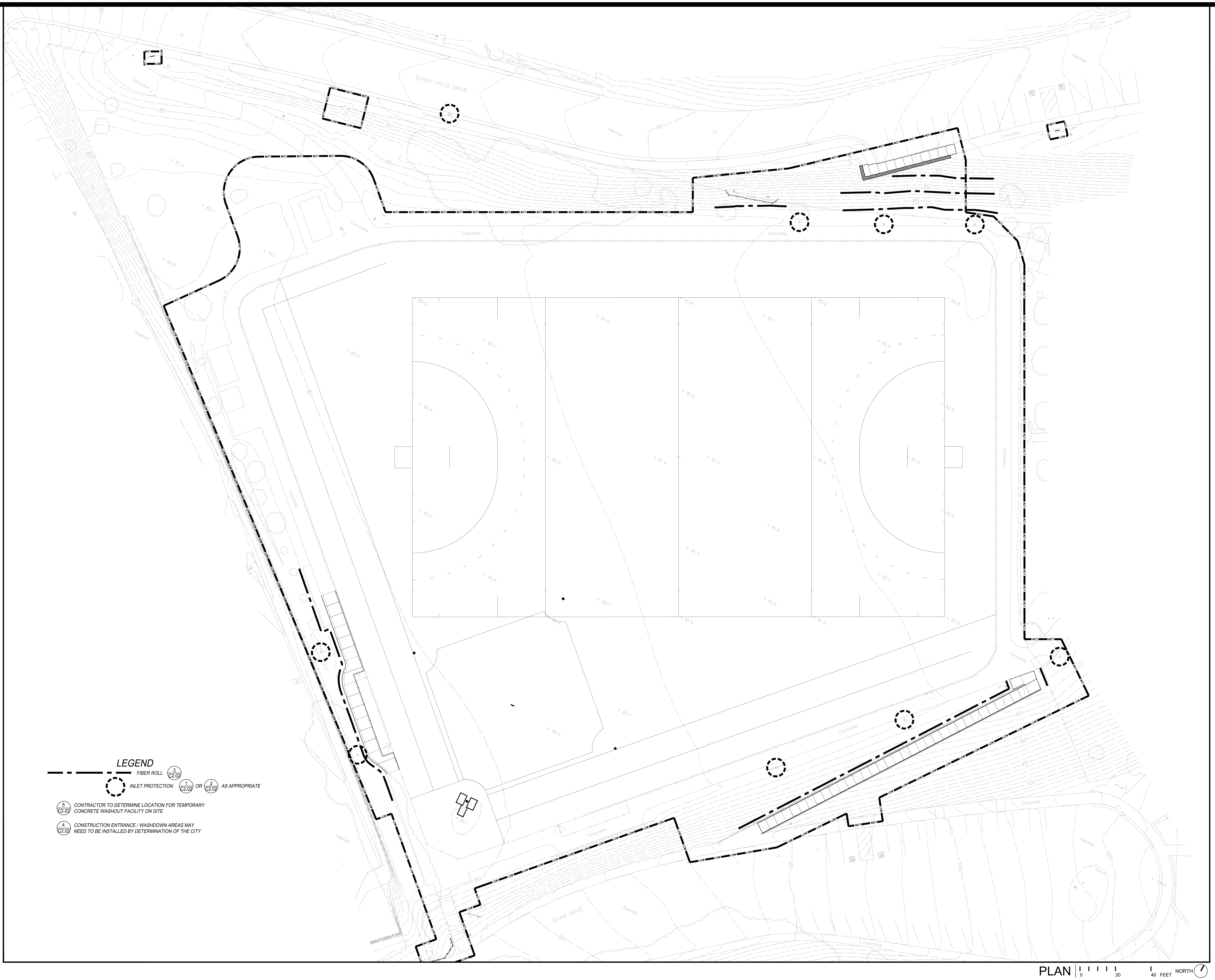
811 Know what's below. Call 811 before you dig.


LEGEND
FIBER ROLL 3/C2.02
INLET PROTECTION 1/C2.02 OR 2/C2.02 AS APPROPRIATE
5/C2.02 CONTRACTOR TO DETERMINE LOCATION FOR TEMPORARY CONCRETE WASHOUT FACILITY ON SITE
4/C2.02 CONSTRUCTION ENTRANCE / WASHDOWN AREAS MAY NEED TO BE INSTALLED BY DETERMINATION OF THE CITY
SUNNY HILLS DRIVE
SHAW DRIVE
Concrete
Asphalt
PLAN
0
20
40 FEET
NORTH

Know what's below. Call 811 before you dig.

2/15/2023 F:\DATA\ACAD\202215\CAD\C-BASE.DWG

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DSA APP NUMBER
#01-120489

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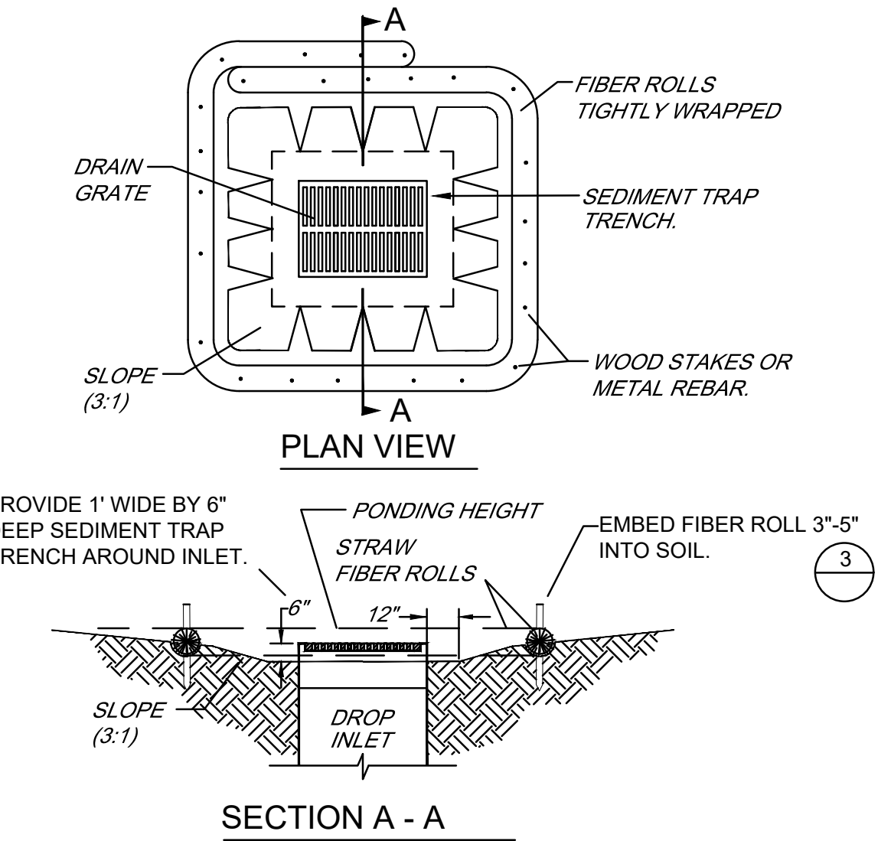
SCALE: AS SHOWN
PROJECT NO: TAM22-01

SHEET TITLE

EROSION CONTROL PLAN

SHEET NUMBER

C2.01


A
FIBER ROLLS TIGHTLY WRAPPED
DRAIN GRATE
SEDIMENT TRAP TRENCH.
SLOPE (3:1)
WOOD STAKES OR METAL REBAR.
A
PLAN VIEW
PROVIDE 1' WIDE BY 6" DEEP SEDIMENT TRAP TRENCH AROUND INLET.
PONDING HEIGHT
STRAW FIBER ROLLS
EMBED FIBER ROLL 3"-5" INTO SOIL.
3
6"
12"
SLOPE (3:1)
DROP INLET
SECTION A - A

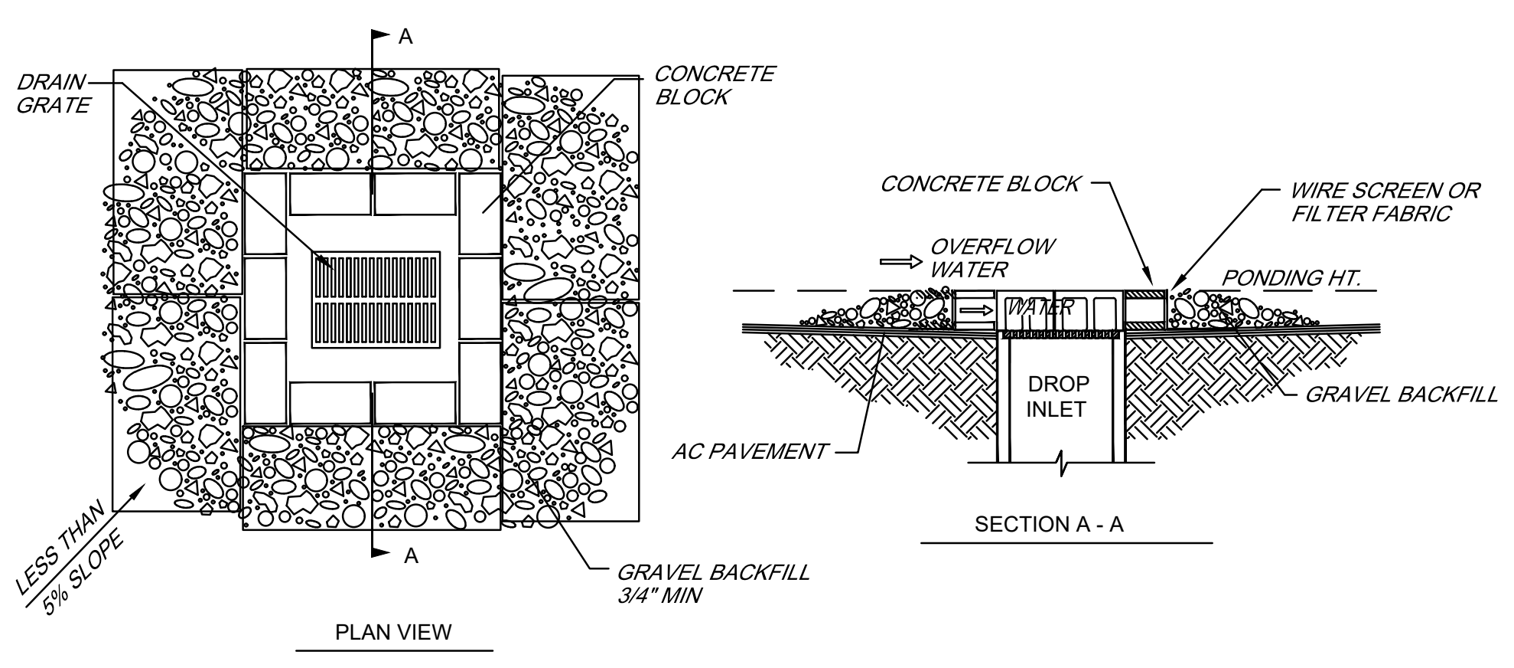
NOTES:
1. PLACE FIBER ROLLS AROUND THE INLET CONSISTENT WITH BASIN SEDIMENT BARRIER DETAIL ON THIS SHEET. FIBER ROLLS ARE TUBES MADE FROM STRAW BOUND W/ PLASTIC NETTING. THEY ARE APPROX. 8" DIA. AND 20 - 30 FT. LONG.

2. FIBER ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE FIBER ROLL IN A TRENCH, 3" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND FIBER ROLL.

3. THE TOP OF THE STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BY-PASSING THE INLET. EXCAVATION OF A BASIN ADJACENT TO THE DROP INLET OR A TEMPORARY DIKE ON THE DOWNSLOPE OF THE STRUCTURE MAY BE NECESSARY.

1 STRAW WATTLE OR FIBER ROLL DROP INLET SEDIMENT BARRIER

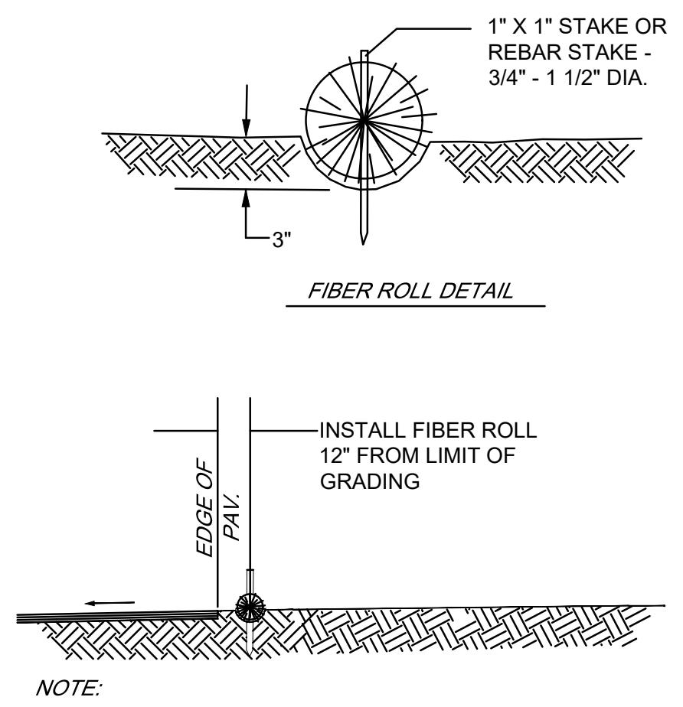
NO SCALE



NOTES:
1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%)
2. EXCAVATE A BASIN OF SUFFICIENT SIZE ADJACENT TO THE DROP INLET.
3. THE TOP OF THE STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF THE STRUCTURE.
4. TOP OF BLOCK SHALL BE AT LEAST 3" BELOW ADJACENT TOP OF CURB.

2 BLOCK AND GRAVEL BAG DROP INLET SEDIMENT BARRIER

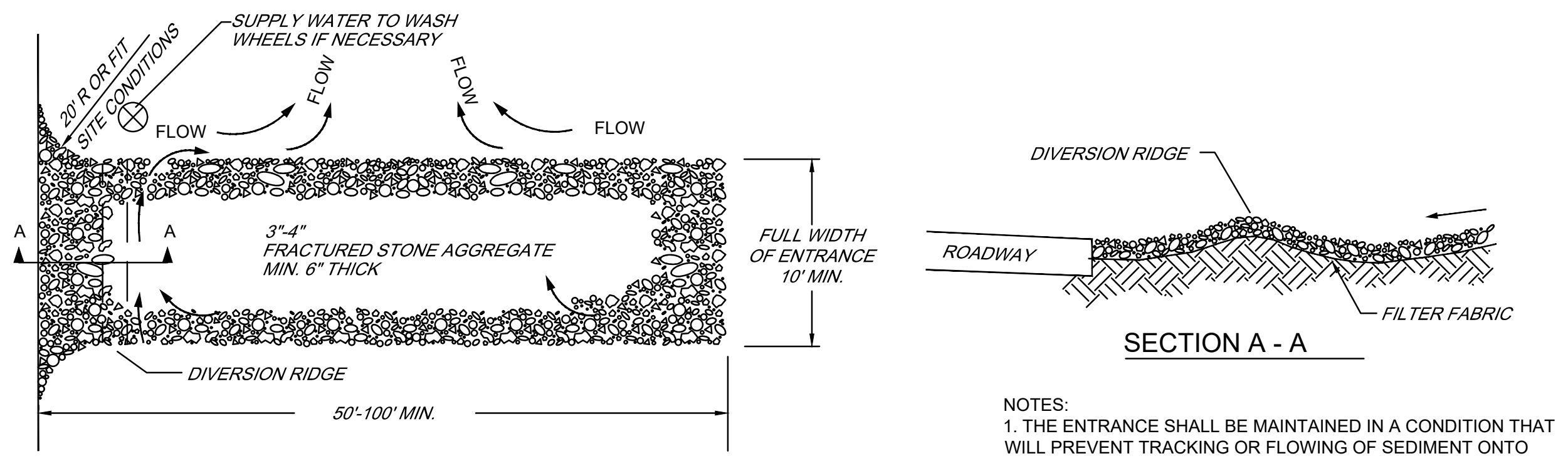
NO SCALE


1" X 1" STAKE OR REBAR STAKE - 3/4" - 1 1/2" DIA.
3"
FIBER ROLL DETAIL
EDGE OF PAV.
INSTALL FIBER ROLL 12" FROM LIMIT OF GRADING

NOTE:
1. FIBER ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.

3 FIBER ROLLS

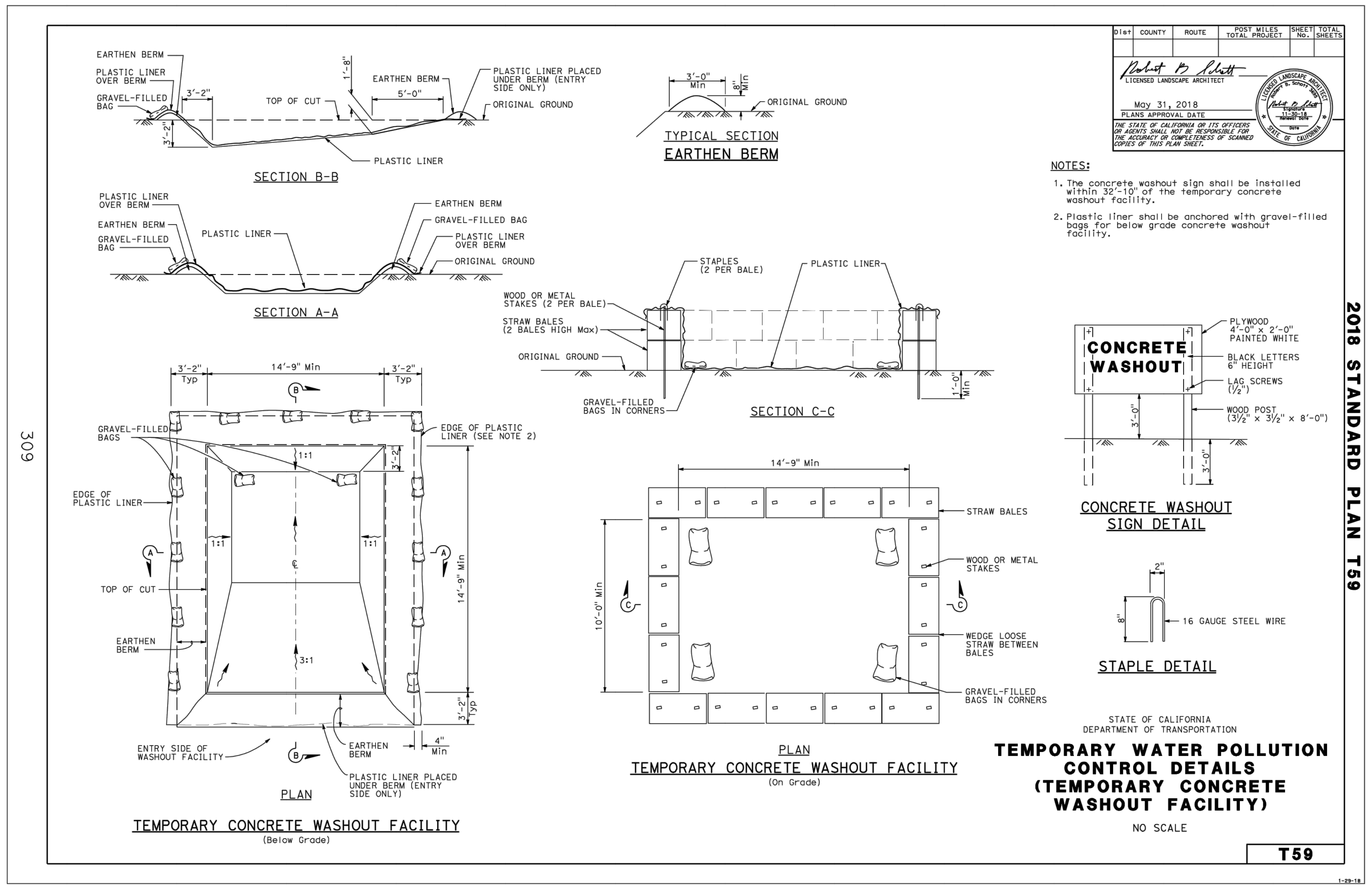
NO SCALE


SUPPLY WATER TO WASH WHEELS IF NECESSARY
20' R OR FIT SITE CONDITIONS
FLOW
FLOW
FLOW
FLOW
ROADWAY
A
A
3"-4" FRACTURED STONE AGGREGATE MIN. 6" THICK
FULL WIDTH OF ENTRANCE 10' MIN.
DIVERSION RIDGE
50'-100' MIN.
PLAN
DIVERSION RIDGE
ROADWAY
FILTER FABRIC
SECTION A - A

4 TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT & WASHDOWN AREA

NO SCALE

NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.


309

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

Robert B. Schott
LICENSED LANDSCAPE ARCHITECT
May 31, 2018
PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.
11-30-18

NOTES:
1. The concrete washout sign shall be installed within 32'-10" of the temporary concrete washout facility.
2. Plastic liner shall be anchored with gravel-filled bags for below grade concrete washout facility.

TEMPORARY CONCRETE WASHOUT FACILITY
(Below Grade)

TEMPORARY CONCRETE WASHOUT FACILITY
(On Grade)

CONCRETE WASHOUT SIGN DETAIL

STAPLE DETAIL

2018 STANDARD PLAN T59

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY CONCRETE WASHOUT FACILITY)

NO SCALE

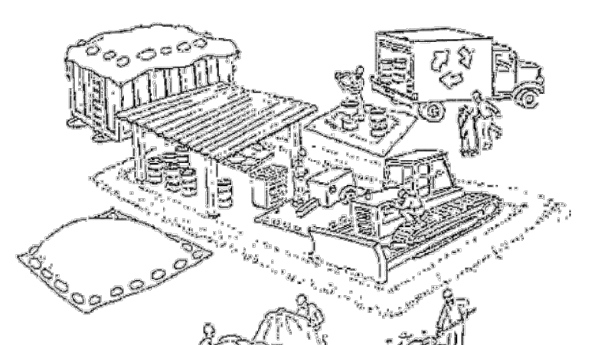
T59

1-29-18

2 TEMPORARY CONCRETE WASHOUT FACILITY

NO SCALE

Clean Bay Blue Print



Make sure your crews and subs do the job right!

Runoff from streets and other paved areas is a major source of pollution and damage to creeks and the San Francisco Bay. Construction activities can directly affect the health of creeks and the Bay unless contractors and crews plan ahead to keep dirt, debris, and other construction waste away from storm drains and local creeks. Following these guidelines and the project specifications will ensure your compliance with City of Dublin requirements.

Materials storage & spill cleanup

Non-hazardous materials management

- ✓ Sand, dirt, and similar materials must be stored at least 10 feet (3 meters) from catch basins. All construction material must be covered with a tarp and contained with a perimeter control during wet weather or when rain is forecasted or when not actively being used within 14 days.
- ✓ Use (but don't overuse) reclaimed water for dust control as needed.
- ✓ Sweep or vacuum streets and other paved areas daily. Do not wash down streets or work areas with water!
- ✓ Recycle all asphalt, concrete, and aggregate base material from demolition activities. Comply with City of Dublin Ordinances for recycling construction materials, wood, gyp board, pipe, etc.
- ✓ Check dumpsters regularly for leaks and to make sure they are not overfilled. Repair or replace leaking dumpsters promptly.
- ✓ Cover all dumpsters with a tarp at the end of every work day or during wet weather.

Hazardous materials management

- ✓ Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, county, state, and federal regulations.
- ✓ Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecasted.
- ✓ Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecasted within 24 hours.
- ✓ Be sure to arrange for appropriate disposal of all hazardous wastes.

Spill prevention and control

- ✓ Keep a stockpile of spill cleanup materials (rags, absorbents, etc.) available at the construction site at all times.
- ✓ When spills or leaks occur, contain them immediately and be particularly careful to prevent leaks and spills from reaching the gutter, street, or storm drain. Never wash spilled material into a gutter, street, storm drain, or creek!
- ✓ Dispose of all containment and cleanup materials properly.
- ✓ Report any hazardous materials spills immediately! Dial 911

Construction Entrances and Perimeter

- ✓ Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site.
- ✓ Sweep or vacuum any street tracking immediately and secure sediment source to prevent further tracking.

Vehicle and equipment maintenance & cleaning

- ✓ Inspect vehicles and equipment for leaks frequently. Use drip pans to catch leaks until repairs are made; repair leaks promptly.
- ✓ Fuel and maintain vehicles on site only in a bermed area or over a drip pan that is big enough to prevent runoff.
- ✓ If you must clean vehicles or equipment on site, clean with water only in a bermed area that will not allow rinse water to run into gutters, streets, storm drains, or creeks.
- ✓ Do not clean vehicles or equipment on-site using soaps, solvents, degreasers, steam cleaning equipment, etc.

Earthwork & contaminated soils

- ✓ Keep excavated soil on the site where it will not collect in the street.
- ✓ Transfer to dump trucks should take place on the site, not in the street.
- ✓ Use fiber rolls, silt fences, or other control measures to minimize the flow of silt off the site.

- ✓ Earth moving activities are only allowed during dry weather by permit and as approved by the City of Dublin inspector in the Field.
- ✓ Mature vegetation is the best form of erosion control. Minimize disturbance to existing vegetation whenever possible.
- ✓ If you disturb a slope during construction, prevent erosion by securing the soil with erosion control fabric, or seed with fast-growing grasses as soon as possible. Place fiber rolls down-slope until soil is secure.
- ✓ If you suspect contamination (from site history, discoloration, odor, texture, abandoned underground tanks or pipes, or buried debris), call the Engineer for help in determining what should be done, and manage disposal of cntaminated soil according to their instructions.

Dewatering operations

- ✓ Effectively manage all run-on, all runoff within the site, and all runoff that discharges from the site. Run-on from off site shall be directed away from all disturbed areas or shall collectively be in compliance.
- ✓ Reuse water for dust control, irrigation, or another on-site purpose to the greatest extent possible.
- ✓ Be sure to notify and obtain approval from the Engineer before discharging water to a street, gutter, or storm drain. Filtration or diversion through a basin, tank, or sediment trap may be required.
- ✓ In areas of known contamination, testing is required prior to reuse or discharge of groundwater. Consult with the Engineer to determine what testing is required and how to interpret results. Contaminated groundwater must be treated or hauled off-site for proper disposal.

Saw cutting

- ✓ Always completely cover and barricade storm drain inlets when saw cutting. Use plastic sheeting (Visqueen) to keep slurry out of the storm drain system.
- ✓ Shovel, absorb, or vacuum saw-cut slurry and pick up all waste as soon as you are finished in one location or at the end of each work day (whichever is sooner!).
- ✓ If saw cut slurry enters a catch basin, clean it up immediately.

Paving/asphalt work

- ✓ Always cover storm drain inlets and manholes when paving or applying seal coat, tack coat, slurry seal, or fog seal.
- ✓ Protect gutters, ditches, and drainage courses with sand/gravel bags, or earthen berms.
- ✓ Do not sweep or wash down excess sand from sand sealing into gutters, storm drains, or creeks. Collect sand and return it to the stockpile, or dispose of it as trash.
- ✓ Do not use water to wash down fresh asphalt concrete pavement.

Concrete, grout, and mortar storage & waste disposal

- ✓ Store concrete, grout, and mortar under cover, on pallets, and away from drainage areas. These materials must never reach a storm drain.
- ✓ Wash out concrete equipment/trucks off-site or into contained washout areas that will not allow discharge of wash water onto the underlying soil or onto the surrounding areas.

- ✓ Collect the wash water from washing exposed aggregate concrete and remove it for appropriate disposal off site.

Painting

- ✓ Never rinse paint brushes or materials in a gutter or street!
- ✓ Paint out excess water-based paint before rinsing brushes, rollers, or containers in a sink.
- ✓ Paint out excess oil-based paint before cleaning brushes in thinner.
- ✓ Filter paint thinners and solvents for reuse whenever possible. Dispose of oil-based paint sludge and unusable thinner as hazardous waste.

Landscape Materials

- ✓ Contain, cover, and store on pallets all stockpiled landscape materials (mulch, compost, fertilizers, etc.) during wet weather or when rain is forecasted or when not actively being used within 14 days.
- ✓ Discontinue the application of any erodible landscape material within 2 days of forecasted rain and during wet weather.

Storm drain polluters may be liable for fines of $10,000 or more per day!

For references and more detailed information:
www.cleanwaterprogram.org
www.cabmphandbooks.com

DUST CONTROL NOTES

TO REDUCE DUST LEVELS, EXPOSED EARTH SURFACES SHALL BE WATERED AS NECESSARY. THE APPLICATION OF WATER SHALL BE MONITORED TO PREVENT RUNOFF INTO THE STORM DRAIN SYSTEM. SPILLAGE RESULTING FROM HAULING OPERATIONS ALONG OR ACROSS ANY PUBLIC OR PRIVATE PROPERTY SHALL BE REMOVED IMMEDIATELY. DUST NUISANCES ORIGINATING FROM THE CONTRACTOR'S OPERATIONS, EITHER INSIDE OR OUTSIDE OF THE RIGHT-OF-WAY SHALL BE CONTROLLED. THE MEASURES SHALL ALSO INCLUDE:

A) WATER ALL ACTIVE CONSTRUCTION SITES AT LEAST TWICE DAILY.
B) COVER ALL TRUCKS HAULING SOIL, SAND, AND OTHER LOOSE MATERIALS OR REQUIRE ALL TRUCKS TO MAINTAIN AT LEAST TWO FEET OF FREEBOARD.
C) PAVE, APPLY WATER THREE TIMES DAILY, OR APPLY (NON-TOXIC) SOIL STABILIZERS ON ALL UNPAVED ACCESS ROADS, PARKING AREAS, AND STAGING AREAS AT CONSTRUCTION SITES.
D) SWEEP DAILY (WITH WATER SWEEPERS) ALL PAVED ACCESS ROADS, PARKING AREAS AND STAGING AREAS AT CONSTRUCTION SITES.
E) SWEEP STREETS DAILY (WITH WATER SWEEPERS) IF VISIBLE SOIL MATERIAL IS CARRIED ONTO ADJACENT PUBLIC STREETS.
F) HYDROSEED OR APPLY (NON-TOXIC) SOIL STABILIZERS TO INACTIVE CONSTRUCTION AREAS (PREVIOUSLY GRADED AREAS INACTIVE FOR TEN DAYS OR MORE).
G) ENCLOSE, COVER, WATER TWICE DAILY, OR APPLY NON-TOXIC SOIL BINDERS TO EXPOSED STOCKPILED MATERIALS.
H) INSTALL SANDBAGS OR OTHER EROSION-CONTROL MEASURES TO PREVENT SILT RUNOFF TO PUBLIC ROADWAYS.
I) REPLANT VEGETATION IN DISTURBED AREAS AS QUICKLY AS POSSIBLE.
J) WATERING SHOULD BE USED TO CONTROL DUST GENERATION DURING THE BREAK-UP OF PAVEMENT.
K) COVER ALL TRUCKS HAULING DEMOLITION DEBRIS FROM THE SITE.
L) USE DUST-PROOF CHUTES TO LOAD DEBRIS INTO TRUCKS WHENEVER FEASIBLE.
M) WATER OR COVER STOCKPILES OF DEBRIS, SOIL, SAND OR OTHER MATERIALS THAT CAN BE BLOWN BY THE WIND.
N) ALL CONSTRUCTION EQUIPMENT SHALL BE MAINTAINED AND PROPERLY TUNED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. ALL EQUIPMENT SHALL BE CHECKED BY A CERTIFIED MECHANIC AND DETERMINED TO BE IN PROPER RUNNING ORDER PRIOR TO OPERATION.
O) DIESEL POWERED EQUIPMENT SHALL NOT BE LEFT INACTIVE AND IDLING FOR MORE THAN FIVE MINUTES, AND SHALL COMPLY WITH APPLICABLE BAAQMD RULES.
P) USE ALTERNATIVE FUELED CONSTRUCTION EQUIPMENT, IF POSSIBLE.
Q) ALL VEHICLE SPEEDS ON UNPAVED ROADS SHALL BE LIMITED TO 15 MPH.
R) POST A VISIBLE SIGN WITH THE TELEPHONE NUMBER AND PERSON TO CONTACT AT THE LEAD AGENCY REGARDING DUST COMPLAINTS. THIS PERSON SHALL RESPOND AND TAKE CORRECTIVE ACTION WITHIN 24 HOURS. THE AIR DISTRICT PHONE NUMBER SHALL ALSO BE VISIBLE TO ENSURE COMPLIANCE WITH APPLICABLE REGULATIONS.

BMP NOTES

THE OWNER/APPLICANT SHALL ENSURE THAT ALL CONSTRUCTION PERSONNEL FOLLOW STANDARD BMPS FOR STORMWATER QUALITY PROTECTION DURING CONSTRUCTION OF PROJECT. THESE INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

A. STORE, HANDLE AND DISPOSE OF CONSTRUCTION MATERIALS AND WASTES PROPERLY, SO AS TO PREVENT THEIR CONTACT WITH STORMWATER.
B. CONTROL AND PREVENT THE DISCHARGE OF ALL POTENTIAL POLLUTANTS, INCLUDING SOLID WASTES, PAINTS, CONCRETE, PETROLEUM PRODUCTS, CHEMICALS, WASHWATER OR SEDIMENT, AND NON-STORMWATER DISCHARGES TO STORM DRAINS AND WATERCOURSES.
C. USE SEDIMENT CONTROLS, FILTRATION, OR SETTLING TO REMOVE SEDIMENT FROM DEWATERING EFFLUENT.
D. DO NOT CLEAN, FUEL, OR MAINTAIN VEHICLES ON-SITE, EXCEPT IN A DESIGNATED AREA IN WHICH RUNOFF IS CONTAINED AND TREATED.
E. DELINEATE CLEARING LIMITS, EASEMENTS, SETBACKS, SENSITIVE OR CRITICAL AREAS, BUFFER ZONES, TREES, AND DRAINAGE COURSES WITH FIELD MARKERS OR FENCING.
F. PROTECT ADJACENT PROPERTIES AND UNDISTURBED AREAS FROM CONSTRUCTION IMPACTS USING VEGETATIVE BUFFER STRIPS, SEDIMENT BARRIERS OR FILTERS, DIKES, MULCHING OR OTHER MEASURES AS APPROPRIATE.
G. PERFORM CLEARING AND EARTH MOVING ACTIVITIES ONLY DURING DRY WEATHER (APRIL 15 THROUGH NOVEMBER 14).
H. LIMIT AND TIME APPLICATIONS OF PESTICIDES AND FERTILIZERS TO PREVENT POLLUTED RUNOFF.
I. LIMIT CONSTRUCTION ACCESS ROUTES AND STABILIZE DESIGNATED ACCESS POINTS.
J. DO NOT TRACK DIRT OR OTHER MATERIALS OFF-SITE; CLEAN OFF-SITE PAVED AREAS AND SIDEWALKS USING DRY SWEEPING METHODS.
K. IF CONSTRUCTION IS NOT COMPLETE BY THE START OF THE WET SEASON (NOVEMBER 15 THROUGH APRIL 15), PRIOR TO NOVEMBER 15 THE DEVELOPER SHALL IMPLEMENT A WINTERIZATION PROGRAM TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENTATION. AS APPROPRIATE TO THE SITE AND STATUS OF CONSTRUCTION, WINTERIZATION REQUIREMENTS SHALL INCLUDE INSPECTING/MAINTAINING/CLEANING ALL SOIL EROSION AND SEDIMENTATION CONTROLS PRIOR TO, DURING, AND IMMEDIATELY AFTER EACH STORM EVENT; STABILIZING DISTURBED SOILS THROUGH TEMPORARY OR PERMANENT SEEDING, MULCHING, MATTING, TARPING OR OTHER PHYSICAL MEANS; ROCKING UNPAVED VEHICLE ACCESS TO LIMIT DISPERSION OF MUD ONTO PUBLIC RIGHT-OF-WAY; COVERING/TARPING STORED CONSTRUCTION MATERIALS, FUELS, AND OTHER CHEMICALS. PLANS TO INCLUDE PROPOSED MEASURES TO PREVENT EROSION AND POLLUTED RUNOFF FROM ALL SITE CONDITIONS. AS SITE CONDITIONS WARRANT, THE DEPARTMENT OF PUBLIC WORKS MAY DIRECT THE DEVELOPER TO IMPLEMENT ADDITIONAL WINTERIZATION REQUIREMENTS.

EROSION CONTROL NOTES

1. THIS PLAN MAY NOT COVER ALL THE SITUATIONS THAT ARISE DURING CONSTRUCTION DUE TO UNANTICIPATED FIELD CONDITIONS. IN GENERAL, THE CONTRACTOR IS RESPONSIBLE FOR KEEPING SEDIMENT STORM RUN OFF FROM LEAVING THE SITE. FIBER ROLLS SHALL BE USED BY THE CONTRACTOR ON AN AS NEEDED BASIS TO INHIBIT SILT FROM LEAVING THE SITE AND ENTERING THE STORM DRAIN SYSTEM.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES TO PUBLIC AND/OR PRIVATELY OWNED AND MAINTAINED ROADS CAUSED BY THE CONTRACTOR'S GRADING ACTIVITIES, AND SHALL BE RESPONSIBLE FOR THE CLEANUP OF ANY MATERIAL SPILLED ON ANY PUBLIC ROAD ON THE HAUL ROUTE. ADJACENT PUBLIC ROADS SHALL BE CLEANED DURING ALL GRADING AND EXCAVATION ACTIVITIES.

3. EROSION CONTROL FACILITIES SHALL BE MAINTAINED DAILY. THE NAME OF THE PERSON RESPONSIBLE FOR THE DAILY MAINTENANCE OF THESE FACILITIES SHALL BE ON RECORD WITH THE CITY, ALONG WITH A PHONE NUMBER WHERE HE OR SHE CAN BE REACHED 24 HOURS A DAY. THESE FACILITIES SHALL CONTROL AND CONTAIN EROSION-CAUSED SILT DEPOSITS AND PROVIDE FOR THE SAFE DISCHARGE OF SILT-FREE STORM WATER INTO EXISTING AND PROPOSED STORM DRAIN FACILITIES. DESIGN OF THESE FACILITIES MUST BE APPROVED AND UPDATED EACH YEAR BY THE CIVIL ENGINEER.

4. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SUB-CONTRACTORS AND SUPPLIERS ARE AWARE OF ALL STORM WATER QUALITY MEASURES & IMPLEMENT SUCH MEASURES. FAILURE TO COMPLY WITH THE APPROVED CONSTRUCTION WILL RESULT IN THE ISSUANCE OF CORRECTION NOTICES, CITATIONS AND/OR A PROJECT STOP ORDER.

5. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE OPERABLE YEAR AROUND OR UNTIL VEGETATION IS ESTABLISHED ON SLOPED SURFACES.

6. EXPOSED EARTHEN AREAS TO BE STABILIZED SHALL BE SEEDED AND MULCHED IMMEDIATELY AFTER EACH AREA HAS BEEN GRADED. CONTRACTOR SHALL BE RESPONSIBLE FOR INITIAL WATERING OF AREAS TO ESTABLISH GROWTH AND STABILIZE THE SLOPES OF THE THE GRADED AREAS WITH VEGETATION, AND TO RE-SEED ANY AREAS IN WHICH VEGETATION DOES NOT INITIAL TAKE HOLD.

7. DURING THE RAINY SEASON, ALL PAVED AREAS ARE TO BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE IS TO BE MAINTAINED SO AS TO MINIMIZE SEDIMENT RUNOFF TO ANY STORM DRAIN SYSTEM.

8. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT ALL EROSION CONTROL FACILITIES DAILY AND REPAIR ANY DAMAGED FACILITIES IMMEDIATELY.

9. BORROW AND TEMPORARY STOCKPILES SHALL BE PROTECTED WITH APPROPRIATE EROSION CONTROL MEASURES (TARPS, FIBER ROLLS, SILT FENCES ETC.) TO ENSURE SILT DOES NOT LEAVE THE SITE OR ENTER THE STORM DRAIN SYSTEM. REFER TO THE EROSION CONTROL AND SEDIMENT CONTROL FIELD MANUAL, 4TH EDITION, PREPARED BY THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SAN FRANCISCO BAY REGION.

10. USE OF PLASTIC SHEETING BETWEEN OCTOBER 1 AND APRIL 30 IS NOT ACCEPTABLE, UNLESS FOR USE ON STOCKPILES WHERE THE STOCKPILE IS ALSO PROTECTED WITH FIBER ROLLS CONTAINING THE BASE OF THE STOCKPILE.

11. ALL TRUCK TIRES SHALL BE CLEANED PRIOR TO EXITING THE SITE.

12. ALL DIRT PILES / STOCKPILES AND HAUL TRUCKS SHALL BE COVERED.

13. THE CONTRACTOR SHALL IMPLEMENT EROSION AND SEDIMENT CONTROL PRACTICES DETAILED IN THE EROSION CONTROL AND SEDIMENT CONTROL FIELD MANUAL, 4TH EDITION.

14. DURING PERIODS WHEN STORMS ARE FORECAST -
  14.1. EXCAVATED SOILS SHOULD NOT BE PLACED IN STREETS OR ON PAVED AREAS.
  14.2. ANY EXCAVATED SOILS SHOULD BE REMOVED FROM THE STREET BY THE END OF THE DAY.
  14.3. WHERE STOCKPILING IS NECESSARY, COVER WITH A TARP AND SURROUND THE STOCKPILED MATERIAL WITH FIBER ROLES, GRAVEL SEDIMENT BARRIER, SILT FENCE, OR OTHER RUNOFF CONTROLS.
  14.4. USE INLET CONTROLS AS NEEDED (E.G. BLOCK & GRAVEL SEDIMENT BARRIER) FOR STORM DRAIN ADJACENT TO THE PROJECT SITE OR STOCKPILED SOIL.
  14.5. THOROUGHLY SWEEP ALL PAVED AREAS EXPOSED TO SOIL EXCAVATION AND PLACEMENT.

15. DURING PERIODS WHEN STORMS ARE NOT FORECAST -
  15.1. PREVENT STOCKPILED MATERIAL FROM ENTERING THE STORM DRAIN SYSTEM.
  15.2. THOROUGHLY REMOVE LOOSE SOIL VIA SWEEPING FOLLOWING REMOVAL OF DIRT.

16. DUST CONTROL SHOULD BE PRACTICED ON ALL CONSTRUCTION SITES WITH EXPOSED SOILS AS NEEDED. IT IS IMPORTANT IN WINDY OR WIND-PRONE AREAS. DUST CONTROL IS CONSIDERED A TEMPORARY MEASURE AND AS AS INTERMEDIATE TREATMENT BETWEEN SITE DISTURBANCE AND CONSTRUCTION, PAVING, OR REVEGETATION. REFER TO THE EROSION CONTROL AND SEDIMENT CONTROL FIELD MANUAL, 4TH EDITION.

17. EROSION CONTROL MATERIALS MUST BE STORED ON SITE, EVEN DURING WEEKENDS AND THE "OFF SEASON".

18. TREE PROTECTION SHALL BE IN PLACE BEFORE ANY DEMOLITION, GRADING, EXCAVATING, OR GRUBBING IS STARTED.

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DIV. OF THE STATE ARCHITECT
APP: 01-120489 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 3/20/2022

ARCHITECT/ ENGINEER
ZFA STRUCTURAL ENGINEERS

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OWNER
TAMALPAIS UNION HIGH SCHOOL DISTRICT

PROJECT
RED HILL COMMUNITY SPORTS PARK RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

FILE NUMBER 21-H2
DSA APP NUMBER
#01-120489

DATE:	02.15.2023
SCALE:	AS SHOWN
PROJECT NO:	TAM22-01

SHEET TITLE
EROSION CONTROL DETAILS

SHEET NUMBER
C2.02

2/15/2023 F:\DATA\ACAD\202215\CAD\C-EROSION-CONTROL-DETAILS.DWG

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D FOUNDATION NOTES

1. ALLOWABLE (ASD) FOUNDATION DESIGN PRESSURES ARE:

   DRILLED PIERS:
   SKIN FRICTION = 350 PSF
   LATERAL PASSIVE RESISTANCE = 300 PCF

2. ALL SOILS WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE REQUIREMENTS OF THE GEOTECHNICAL REPORT NOTED BELOW, AND CHAPTER 18 OF THE CBC. ALL FOUNDATIONS SHALL BEAR ON FIRM, UNDISTURBED, NATIVE SOILS OR ENGINEERED FILL AT OR EXCEEDING DEPTHS SHOWN ON THE DRAWINGS. ENGINEERED FILL TO BE COMPACTED PER GEOTECHNICAL REPORT. INCREASE FILL AND OR FOOTING DEPTH AS REQUIRED BY GEOTECHNICAL ENGINEER. ALL FOOTING EXCAVATIONS SHALL BE AS NEAT AS PRACTICABLE. MAXIMUM OVER EXCAVATION IN WIDTH SHALL BE LESS THAN 12 INCHES OR 25% OF FOOTING WIDTH, WHICH EVER IS LESS. 6 INCHES MAXIMUM PER SIDE. LARGER OVER-EXCAVATIONS IN WIDTH SHALL BE FILLED WITH ADDITIONAL REINFORCED CONCRETE AS DIRECTED BY THE ENGINEER, OR FORMWORK SHALL BE PROVIDED. OVER-EXCAVATIONS IN DEPTH MAY BE FILLED WITH LEAN CONCRETE OR COMPACTED APPROVED BACKFILL. ALL LOOSE SOILS SHALL BE REMOVED FROM EXCAVATIONS PRIOR TO PLACEMENT OF REINFORCING OR CONCRETE. GEOTECHNICAL REPORT BY:

   MILLER PACIFIC ENGINEERING GROUP
   REPORT NO. 1049.052
   DATED: 07-28-2022

3. WHERE BOTTOM OF ADJACENT FOOTINGS ARE DIFFERENT PROVIDE STEPPED FOOTING PER 3/S1.1.

4. TYPICAL SLAB: 5" CONCRETE REINFORCED WITH #4 @ 16"oc EACH WAY AT MID-DEPTH OVER VAPOR RETARDER (PER SPECIFICATIONS) AND 4" MINIMUM FREE DRAINING COMPACTED CRUSHED ROCK ON SUBGRADE PER THE GEOTECHNICAL RECOMMENDATIONS, AND AS APPROVED BY THE GEOTECHNICAL ENGINEER. DO NOT DRIVE CONCRETE TRUCKS OR LARGE SCREED MACHINES ON VAPOR RETARDER WITHOUT ADDITIONAL BUFFER MATERIAL AND APPROVAL FROM THE STRUCTURAL ENGINEER.

5. REFER TO ARCHITECTURAL AND PLUMBING DRAWINGS FOR DEPRESSED SLABS FOR ARCHITECTURAL FLOORING OR INSERTS, SLOPED SLABS TO DRAIN AND PIPES OR CONDUITS AT SLAB. SEE 5/S1.1 AT DEPRESSED SLAB.

6. PROVIDE CONTROL JOINTS PER 4/S1.1 (OR CONSTRUCTION/DOWEL JOINTS AT CONTRACTOR'S OPTION) AS SHOWN ON PLAN AND AS REQUIRED TO MEET A MAXIMUM SPACING IN FEET OF 3 TIMES THE SLAB DEPTH IN INCHES (FOR EXAMPLE 3x4" = 12'-0"oc MAX) AND 15'-0"oc MAX. INSTALL JOINTS TO DIVIDE SLAB INTO RECTANGULAR AREAS WITH LONG DIMENSION LESS THAN 1.5 x SHORT DIMENSION. INSTALL JOINTS AT FACE OF STUDS OF WALL WHERE POSSIBLE. SUBMIT JOINT LAYOUT PLAN FOR REVIEW PRIOR TO PLACEMENT.

7. DRILLING FOR CAST IN PLACE CONCRETE PIERS REQUIRES OBSERVATION AND APPROVAL OF GEOTECHNICAL ENGINEER. ALL PIERS SHALL BE POURED IN ONE CONTINUOUS POUR WITH STEEL IN PLACE. ALL PIERS TO BE VIBRATED WHILE POURING CONCRETE.

8. DO NOT UNDERCUT EXISTING FOUNDATIONS. NOTIFY ENGINEER FOR REVIEW AND POSSIBLE REVISIONS, IF EXISTING FOUNDATION CONDITIONS ARE NOT AS SHOWN.

9. TOP OF FOOTING ELEVATIONS TO BE DETERMINED BY THE CONTRACTOR BASED ON INFORMATION FROM THE CIVIL DRAWINGS, GEOTECHNICAL REPORT, LANDSCAPE, ETC.

E MATERIAL DATA

(INFORMATION SHOWN IS FOR STRUCTURAL DESIGN REFERENCE ONLY. SEE THE PROJECT SPECIFICATIONS FOR ALL MATERIAL SPECIFICATIONS.)

CONCRETE 28-DAY MINIMUM DESIGN STRENGTH:
F'_c = 4,500 PSI TYPE V W/C RATIO ≤ 0.45 FOUNDATIONS & RETAINING WALLS

REINFORCING STEEL:
ASTM A615 GRADE 60 OR A706 GRADE 60 (F_y = 60,000 PSI)

FASTENERS:
MACHINE BOLTS SHALL BE ASTM A307 GRADE A
HIGH STRENGTH BOLTS SHALL BE ASTM F3125 GRADE A325 OR F1852 UNO
ANCHOR RODS SHALL BE ASTM F1554 GR 36 UNO
ARC-WELDING ELECTRODES SHALL BE E70

FOR METAL CONNECTOR DESIGNATION REFER TO SIMPSON STRONG-TIE PER SPECIFICATIONS.

ABBREVIATIONS

AB	ANCHOR BOLT
ABV	ABOVE
AC	AIR CONDITIONING
ADJ	ADJACENT
ADDL	ADDITIONAL
ALT	ALTERNATE
ALUM	ALUMINUM
ARCH	ARCHITECT
AYC	ALASKAN YELLOW CEDAR
@	AT
BF	BRACED FRAME
BLDG	BUILDING
BLK/BLKG	BLOCK/BLOCKING
BLW	BELOW
BM	BEAM
BN	BOUNDARY NAIL
BOT	BOTTOM
BRG	BEARING
BTWN	BETWEEN
BU	BUILT-UP
BYND	BEYOND
C	AMERICAN STANDARD CHANNEL
CA	CALIFORNIA
CANT	CANTILEVER
CB	CARRIAGE BOLT
CFS	COLD FORMED STEEL
CIP	CAST IN PLACE
CGL	CERTIFIED GLUED LUMBER
CJ	CONTROL JOINT
℄	CENTERLINE
CJP	COMPLETE JOINT PENETRATION
CLG	CEILING
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS
COORD	COORDINATE/ COORDINATION
CMU	CONCRETE MASONRY UNIT
CSK	COUNTERSINK
CW	CUT WASHER
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DCW	DEMAND CRITICAL WELD
DF	DOUGLAS FIR
DIA or Ø	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DJ	DOWEL JOINT
DL	DEAD LOAD
DN	DOWN
DO	DITTO
DWG	DRAWING
DWL	DOWEL
EA	EACH
EE	EACH END
EF	EACH FACE
ELEC	ELECTRICAL
ELEV	ELEVATOR/ELEVATION
EMBED	EMBEDMENT
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
(E)	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FDN	FOUNDATION
FIN	FINISH
FG	FINISH GRADE
FLR	FLOOR
FN	FACE NAIL
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FRMG	FRAMING
FS	FAR SIDE
FTG	FOOTING
GA	GAGE or GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GL	GRIDLINE
GLB	GLUE LAMINATED BEAM
GR	GRADE
HD	HOLD DOWN
HDG	HOT-DIP GALVANIZED
HDR	HEADER
HGR	HANGER
HK	HOOK
HORIZ	HORIZONTAL
HSB	HIGH STRENGTH BOLT
HSG	HIGH STRENGTH GROUT
HSH	HORIZONTAL SLOTTED HOLE
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
ID	INSIDE DIAMETER
IJ	I SHAPED WOOD BUILT UP TRUSS
INT	INTERIOR
JST	JOIST
JT	JOINT
KP	KING POST
L	STEEL ANGLE
Lb or #	POUND(s)
LGMF	LIGHT GAGE METAL FRAMING
LGMFC	LIGHT GAGE METAL FRAMING CONTRACTOR
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LS	LAG SCREW
LSL	LAMINATED STRAND LUMBER
LVL	LAMINATED VENEER LUMBER
LWC	LIGHTWEIGHT CONCRETE
MAX	MAXIMUM
MB	MACHINE BOLT
MBM	METAL BUILDING MANUFACTURER
MC	MISCELLANEOUS CHANNEL
MECH	MECHANICAL
MEZZ	MEZZANINE
MF	MOMENT FRAME
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MIW	MALLEABLE IRON WASHER
MTL	METAL
MU	MECH UNIT
(N)	NEW
N/A	NOT APPLICABLE
NO or #	NUMBER
NS	NEAR SIDE
NSG	NON-SHRINK GROUT
NTS	NOT TO SCALE
NWC	NORMAL-WEIGHT CONCRETE
O/	OVER
oc	ON CENTER
OD	OUTSIDE DIAMETER
OH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OVS	OVERSIZED
OW	OTHERWISE
OWT	OPEN WEB TRUSS
⅊	PLATE or PROPERTY LINE
PA	POST ABOVE
PAF	POWER ACTUATED FASTENERS
PEN	PANEL EDGE NAIL
PERP	PERPENDICULAR
PES	PANEL EDGE SCREWS
PJP	PARTIAL JOINT PENETRATION
PLF	POUNDS PER LINEAR FOOT
PNL	PANEL
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PTDF	PRESSURE TREATED DOUGLAS FIR
PT	POINT
R	RADIUS
RBS	REDUCED BEAM SECTION
RFTR	RAFTER
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
RET	RETAINING
REV	REVISION
RF	ROOF
RWD	REDWOOD
S	AMERICAN STANDARD BEAM
SAD	SEE ARCHITECTURAL DRAWINGS
SB	SOLID BLOCK
SC	SLIP CRITICAL
SCD	SEE CIVIL DRAWINGS
SCHED	SCHEDULE
SED	SEE ELECTRICAL DRAWINGS
SEOR	STRUCTURAL ENGINEER OF RECORD
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHTG	SHEATHING
SIM	SIMILAR
SKYLT	SKYLIGHT
SLD	SEE LANDSCAPE DRAWINGS
SMS	SHEET METAL SCREW
SMD	SEE MECHANICAL DRAWINGS
SOG	SLAB ON GRADE
SPCG	SPACING
SPD	SEE PLUMBING DRAWINGS
SPEC	SPECIFICATION
SQ	SQUARE
SS	SELECT STRUCTURAL or STAINLESS STEEL
STGR	STAGGERED
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUCT	STRUCTURAL
SW	SHEAR WALL
SYM	SYMMETRICAL
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
THK	THICK
THRD	THREADED
THRU	THROUGH
TL	TOTAL LOAD
TN	TOE NAIL
TOC	TOP OF CONCRETE
TOF	TOP OF FRAMING
TOM	TOP OF MASONRY
TOP	TOP OF PLYWOOD
TOS	TOP OF STEEL
TOT	TOTAL
TU	TILT UP
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VSH	VERTICAL SLOTTED HOLE
W	WIDE FLANGE STEEL BEAM
W/	WITH
W/O	WITHOUT
WD	WOOD
WHS	WELDED HEADED STUD
WLD	WELDED
WP	WORK POINT/WATERPROOF
WS	WOOD SCREW
WT	WEIGHT
WTS	WELDED THREADED STUD
WWR	WELDED WIRE REINFORCEMENT

A DESIGN CRITERIA

DESIGN CRITERIA: 2019 CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2 (CBC)
FLOOR LIVE LOAD: 125 PSF
RISK CATEGORY: II
WIND DATA: ULTIMATE WIND SPEED (3 SEC GUST) IN MPH: 91
WIND EXPOSURE: C
INTERNAL WIND PRESSURE COEFFICIENT (GCPI) = ±0.18
COMPONENTS AND CLADDING DESIGN PRESSURES FOR SYSTEMS DESIGNED BY OTHERS SHALL COMPLY WITH THE "ASCE 7-16" DESIGN STANDARD
EARTHQUAKE DATA: SEISMIC IMPORTANCE FACTOR, I_e: 1.0
MAPPED SPECTRAL RESPONSE ACCELERATIONS: S_S = 1.5; S_1 = 0.6
SITE CLASS: D
SPECTRAL RESPONSE COEFFICIENTS: S_{DS} = 1.2; S_{D1} = 0.68
SEISMIC DESIGN CATEGORY: D
SEISMIC FORCE RESISTING SYSTEM(S): WOOD FRAMED SHEAR WALLS
RESPONSE MODIFICATION FACTOR(S): R = 4
SEISMIC RESPONSE COEFFICIENT(S), C_S = 0.13 (ULTIMATE)
ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE

SCOPE: NEW REINFORCED CONCRETE RETAINING WALL AT THE NORTH SIDE OF THE EXISTING COMMUNITY PARK. NEW FLAT WORK AT EXISITNG EXTERIOR RAMP SYSTEM.

B GENERAL NOTES

1. REFER TO SHEET S1.1 FOR STANDARD DETAILS OF CONSTRUCTION. REFER TO THE PROJECT SPECIFICATIONS FOR MATERIALS AND METHODS.

2. BUILDING DIMENSIONS SHOWN ARE FOR GENERAL REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS (SAD) FOR ALL ACTUAL BUILDING DIMENSIONS. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER SO CLARIFICATION CAN BE MADE PRIOR TO COMMENCING WORK.

3. STRUCTURAL DRAWINGS SHALL NOT BE SCALED. ALL DIMENSIONS AND FIT SHALL BE DETERMINED AND VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING WORK.

4. DETAILS NOT FULLY OR SPECIFICALLY SHOWN SHALL BE OF SAME NATURE AS OTHER SIMILAR CONDITIONS.

5. REFER TO ARCHITECTURAL DRAWINGS FOR SIDEWALK SLABS AND DIMENSIONS.

6. COORDINATION OF MECHANICAL, ELECTRICAL, PLUMBING, AND SITE UTILITY SYSTEMS WITH THE STRUCTURAL SYSTEM IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. USE DETAILS ON SHEET S1.1. AT CONDITIONS WHERE THESE DETAILS DO NOT APPEAR TO APPLY, NOTIFY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION. AT CONDITIONS WHERE FIELD MODIFICATIONS OF MECHANICAL, ELECTRICAL, PLUMBING, OR SITE UTILITIES AFFECT STRUCTURAL SYSTEMS, NOTIFY STRUCTURAL ENGINEER PRIOR TO INSTALLATION.

7. SHORING AND BRACING DESIGN, MATERIALS AND INSTALLATION SHALL BE PROVIDED BY THE GENERAL CONTRACTOR, AND SHALL BE ADEQUATE FOR ALL LOADS. LEAVE IN PLACE AS LONG AS MAY BE REQUIRED FOR SAFETY AND UNTIL FINAL STRUCTURAL CONSTRUCTION IS COMPLETED. THE CONTRACTOR SHALL ENGAGE A LICENSED CIVIL OR STRUCTURAL ENGINEER TO PROVIDE SHORING.

8. VEHICULAR TRAFFIC, HEAVY EQUIPMENT AND MATERIAL STAGING SHALL NOT BE ALLOWED ADJACENT TO ANY RETAINING/BASEMENT WALL, NEW OR EXISTING WITHIN A HORIZONTAL DISTANCE EQUAL TO THE WALL HEIGHT MEASURED FROM THE BOTTOM OF FOOTING OR 5'-0" WHICHEVER IS GREATER, UNLESS APPROVED BY THE STRUCTURAL ENGINEER OR NOTED OTHERWISE. WITHIN THIS ZONE, ONLY HAND-OPERATED EQUIPMENT ("WHACKERS", VIBRATORY PLATES, OR PNEUMATIC COMPACTORS) SHALL BE USED TO COMPACT THE BACKFILL SOILS.

9. NOTIFY ZFA FOR GENERAL ON SITE REVIEW OF:

   - MINIMUM FOOTING SIZE AND REINFORCING STEEL.
   - RETAINING WALLS AND REINFORCING.

NOTIFY ZFA FOR REVIEW PRIOR TO COVERING ABOVE LISTED WORK. PROVIDE 2 WORKING DAYS MINIMUM SCHEDULING NOTICE PRIOR TO REVIEW DATE.

C EXISTING CONSTRUCTION NOTES

1. IN PREPARING THE PROJECT PLANS, THE SOURCE OF INFORMATION WAS BASED ON THE EXISTING BUILDING PLANS PREPARED BY, ABEY ARNOLD ASSOCIATES LANDSCAPE ARCHITECTS, DATED JANUARY 30, 2007 (DSA APP#108176). THE CONTRACTOR SHALL VERIFY ALL EXISTING JOB CONDITIONS, REVIEW THE PLANS AND VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF ALL DISCREPANCIES AND EXCEPTIONS BEFORE PROCEEDING WITH ANY WORK. DRAWINGS FOR THE EXISTING CONSTRUCTION ARE AVAILABLE FOR REVIEW.

2. ALL WORK NOT INDICATED AS EXISTING (E) SHALL BE ASSUMED TO BE NEW (N).

3. ANY REMOVAL, CUTTING, DRILLING, ETC OF EXISTING WORK SHALL BE PERFORMED WITH GREAT CARE. SMALL TOOLS SHALL BE USED IN ORDER NOT TO JEOPARDIZE THE STRUCTURAL INTEGRITY OF THE STRUCTURE. IF STRUCTURAL MEMBERS OR MECHANICAL, ELECTRICAL, OR ARCHITECTURAL ELEMENTS NOT INDICATED FOR REMOVAL INTERFERE WITH THE NEW WORK, THE ARCHITECT/ENGINEER SHALL BE IMMEDIATELY NOTIFIED AND PRIOR APPROVAL SHALL BE OBTAINED BEFORE REMOVAL OF THE MEMBERS.

4. DO NOT OVER CUT EXISTING WOOD, CONCRETE OR OTHER WORK TO REMAIN. CUTS SHALL BE MADE NEATLY TO A CORNER, THEN ALTERNATE MEANS SHALL BE USED TO REMOVE REMAINING MATERIAL. CONTRACTOR IS RESPONSIBLE FOR REPAIR/REPLACEMENT OF OVER CUT MATERIAL AS DIRECTED BY THE ARCHITECT AND/OR ENGINEER.

5. EXISTING DAMAGED STRUCTURAL MEMBERS WHICH ARE UNCOVERED SHALL BE REPORTED TO THE ARCHITECT/ENGINEER FOR REVIEW AND REPAIR.

6. EXISTING CONCRETE SURFACE ABUTTING NEW CONCRETE SHALL BE ROUGHENED TO ¼" AMPLITUDE AND THOROUGHLY CLEANED OF DUST, LOOSE AGGREGATE, LAITANCE, ETC.

7. EXISTING REINFORCING AND/OR STEEL EMBEDS THAT ARE EXPOSED DURING DEMOLITION SHALL BE WIRE-BRUSHED AND FOREIGN MATERIAL REMOVED PRIOR TO PLACEMENT OF NEW CONCRETE.

SHEET INDEX

S0.1	GENERAL NOTES
S1.1	TYPICAL CONCRETE DETAILS
S2.1	FOUNDATION PLAN
S4.1	FOUNDATION DETAILS

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APP: 01-120489 INC:
REVIEWED FOR
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DATE: 3/20/2022

ARCHITECT/ ENGINEER

ZFA STRUCTURAL ENGINEERS

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CHRIS S. WARNER
No. S4613

DESIGN TEAM

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SAN FRANCISCO, CA 94133
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STAMP

OWNER

TAMALPAIS UNION
HIGH SCHOOL
DISTRICT

PROJECT

REDHILL
COMMUNITY
SPORTS PARK
RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

DSA SUBMITTAL

FILE NUMBER 21-H2
DSA APP NUMBER 01-120489

DATE: 01.20.2023
SCALE: As indicated
ARCH PROJECT NO: TAM22-01

SHEET TITLE

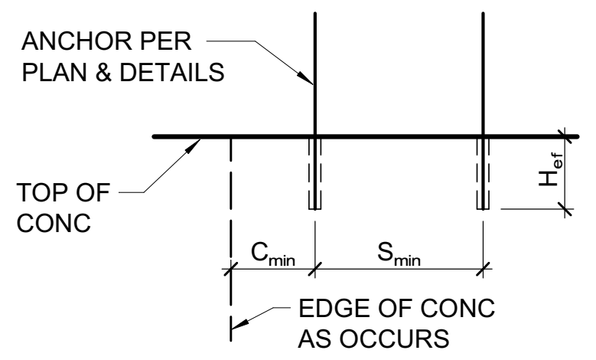
GENERAL NOTES

SHEET NUMBER

S0.1

ADHESIVE ANCHOR IN 2500 PSI MIN CONCRETE

ADHESIVE TYPE	ANCHOR		PILOT HOLE	MIN EMBED UNO H_{ef}	MIN EDGE DISTANCE C_{min}	MIN SPCG S_{min}	MIN CONC DEPTH H_{min}
	THRD ROD	REBAR					
SIMPSON SET-XP (ICC-ESR 2508)	⅜"Ø	#3	½"Ø	3"	1¾"	3"	H_{ef} + 2½"
	½"Ø	#4	⅝"Ø	4"	1¾"	3"	H_{ef} + 3⅛"
	⅝"Ø	#5	¾"Ø	5"	1¾"	3"	H_{ef} + 3¾"
	¾"Ø	#6	⅞"Ø	6"	1¾"	3"	H_{ef} + 4⅜"
	⅞"Ø	#7	1"Ø	7"	1¾"	3"	H_{ef} + 4"
	1"Ø	#8	1⅛"Ø	8"	1¾"	3"	H_{ef} + 5⅝"
	1¼"Ø	#10	1⅜"Ø	10"	2¾"	6"	H_{ef} + 6⅞"
HILTI HIT-HY 200R (ICC-ESR 3187)	⅜"Ø	N/A	7⁄16"Ø	3"	1¾"	1⅞"	H_{ef} + 1¼"
	N/A	#3	½"Ø	3"	1¾"	1⅞"	
	½"Ø	N/A	9⁄16"Ø	4"	1¾"	2½"	
	N/A	#4	⅝"Ø	4"	1¾"	2½"	
	⅝"Ø	#5	¾"Ø	5"	1¾"	3⅛"	H_{ef} + 1½"
	¾"Ø	#6	⅞"Ø	6"	1¾"	3¾"	H_{ef} + 1¾"
	⅞"Ø	#7	1"Ø	7"	1¾"	4⅜"	H_{ef} + 2"
	1"Ø	#8	1⅛"Ø	8"	1¾"	5"	H_{ef} + 2¼"
	N/A	#9	1⅜"Ø	9"	1¾"	5⅝"	H_{ef} + 2¾"
	1¼"Ø	N/A	1⅜"Ø	10"	1¾"	6¼"	
	N/A	#10	1½"Ø	10"	1¾"	6¼"	H_{ef} + 3"

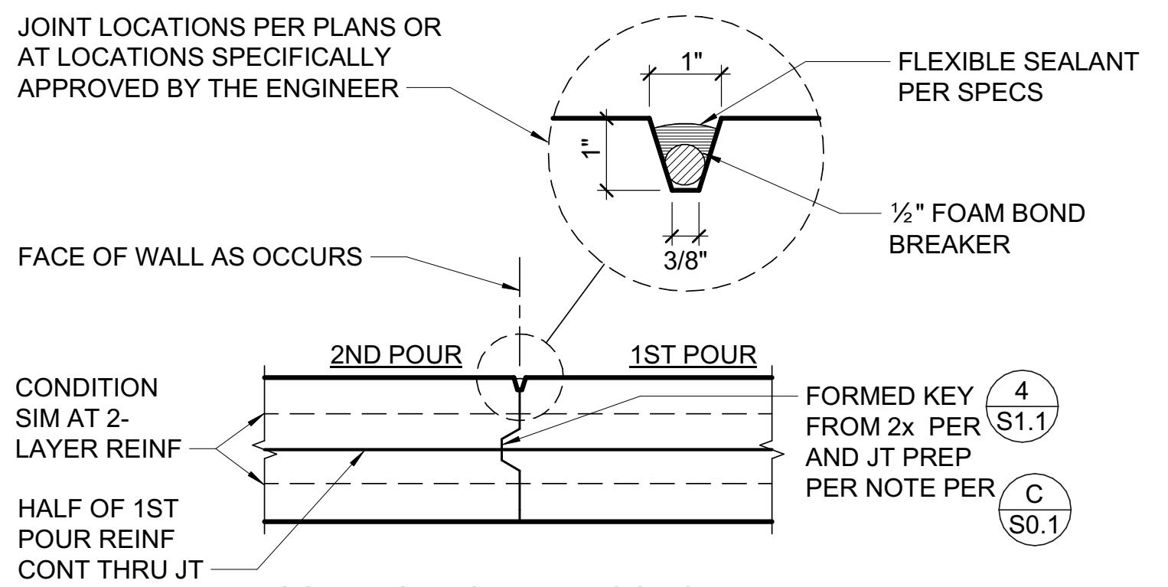

ANCHOR PER
PLAN & DETAILS
TOP OF
CONC
H_{ef}
C_{min}
S_{min}
EDGE OF CONC
AS OCCURS

NOTES:

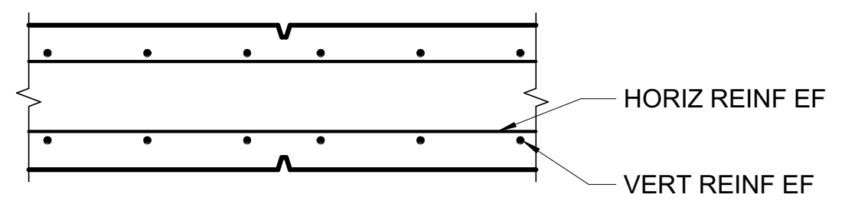
1. INSTALL ADHESIVE ANCHORS PER MANUFACTURER'S INFORMATION AND ICC REPORT.
2. CONTRACTOR TO VERIFY MINIMUM EDGE DISTANCES, SPACING, AND THICKNESS ARE IN ACCORDANCE W/ SCHEDULE PRIOR TO INSTALLING ANCHOR.
3. HOLES TO BE DRILLED W/ ROTARY DRILL ONLY. WHEN DRILLING HOLES IN EXISTING CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR. FILL ABANDONED HOLES W/ HIGH STRENGTH GROUT.
4. SPECIAL INSPECTION IS REQUIRED PER SECTION 1705A AND THE REQUIREMENTS OF THE ICC REPORTS. THE SPECIAL INSPECTOR SHALL PERFORM PERIODIC/CONTINUOUS INSPECTION IN ACCORDANCE WITH TABLE 1705A.3. THE SPECIAL INSPECTOR SHALL INSPECT ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE(S), ANCHOR SPACING(S), CONCRETE THICKNESS, AND ADHESIVE INJECTION. TEST ANCHORS IN ACCORDANCE W/ CBC SECTION 1910A.5. SEE DRAWINGS FOR SPECIFIC TENSION TEST LOADS FOR ANCHORS.

8 ADHESIVE ANCHOR IN CONCRETE

3/4" = 1'-0"


JOINT LOCATIONS PER PLANS OR
AT LOCATIONS SPECIFICALLY
APPROVED BY THE ENGINEER
1"
1"
3/8"
FLEXIBLE SEALANT
PER SPECS
½" FOAM BOND
BREAKER
FACE OF WALL AS OCCURS
2ND POUR
1ST POUR
CONDITION
SIM AT 2-
LAYER REINF
HALF OF 1ST
POUR REINF
CONT THRU JT
FORMED KEY
FROM 2x PER
AND JT PREP
PER NOTE PER
4
S1.1
C
S0.1

CONTROL JOINT AT CONST JT

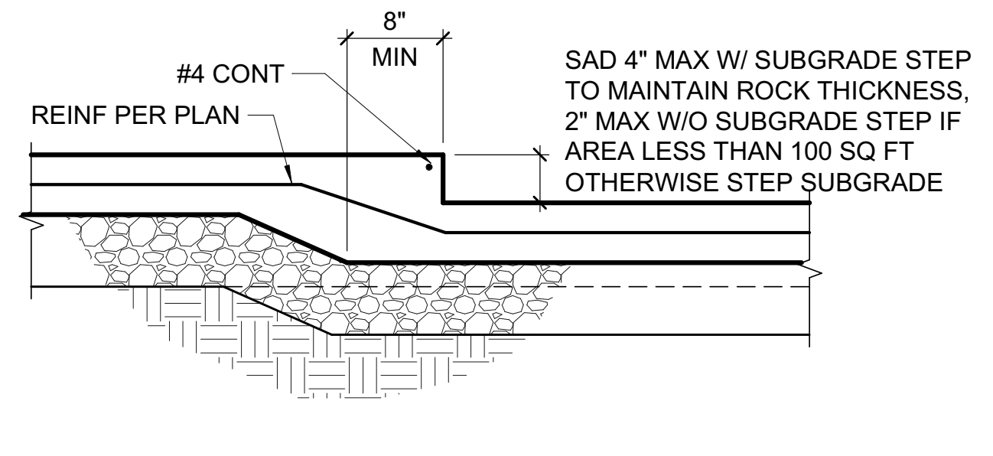

HORIZ REINF EF
VERT REINF EF

WALL CONTROL JOINT W/ DOUBLE LAYER OF REINF

NOTE:
1. SEALANT ON OUTSIDE FACE AT WALLS RETAINING SOIL IS NOT REQUIRED
2. WATERPROOFING FOR WALL SHALL PROVIDE FOR EXPANSION OVER THE JOINT
3. PROVIDE VERTICAL CONTROL JOINTS AT 2x WALL HEIGHT (2H) oc, 10'-0" MIN. JOINTS SHALL NOT EXCEED 25'-0"oc

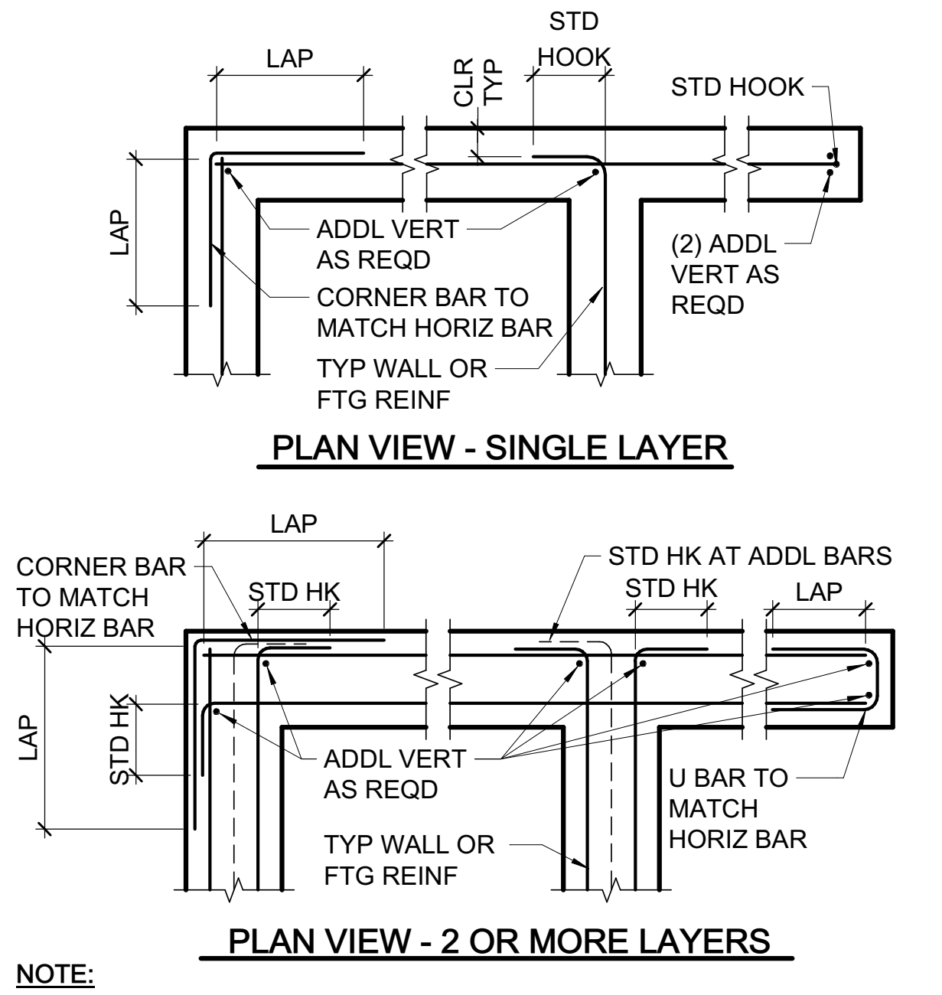
9 CONTROL JOINTS IN CONCRETE RETAINING WALL

3/4" = 1'-0"


8"
MIN
#4 CONT
REINF PER PLAN
SAD 4" MAX W/ SUBGRADE STEP
TO MAINTAIN ROCK THICKNESS,
2" MAX W/O SUBGRADE STEP IF
AREA LESS THAN 100 SQ FT
OTHERWISE STEP SUBGRADE

5 DEPRESSED SLAB - 4" MAX

3/4" = 1'-0"


LAP
CLR
TYP
STD
HOOK
STD HOOK
LAP
ADDL VERT
AS REQD
CORNER BAR TO
MATCH HORIZ BAR
TYP WALL OR
FTG REINF
(2) ADDL
VERT AS
REQD
LAP
CORNER BAR
TO MATCH
HORIZ BAR
STD HK
STD HK AT ADDL BARS
STD HK
LAP
LAP
STD HK
ADDL VERT
AS REQD
TYP WALL OR
FTG REINF
U BAR TO
MATCH
HORIZ BAR

PLAN VIEW - SINGLE LAYER

PLAN VIEW - 2 OR MORE LAYERS

NOTE:
FOOTING REINFORCING AT CORNER AND INTERSECTION TO BE SIMILAR

6 TYPICAL CORNER, INTERSECTION AND END REINFORCING

3/4" = 1'-0"

7 NOT USED

3/4" = 1'-0"

MINIMUM BAR LAPS FOR REINFORCING STEEL CONCRETE STRENGTH: 3000 PSI OR GREATER - (STAGGER SPLICES)					
SIZE	LAP LENGTH	SIZE	LAP LENGTH	SIZE	LAP LENGTH
#3	17"	#6	34"	#9	86"
#4	24"	#7	56"	#10	105"
#5	34"✻	#8	70"	#11	126"

(CLASS B TOP BAR)
BAR SPCG SHALL NOT BE LESS THAN 4x BAR DIA OR 4".
✻ WHERE COVER NOT LESS THAN 1½", #5 LAP LENGTH = 28"

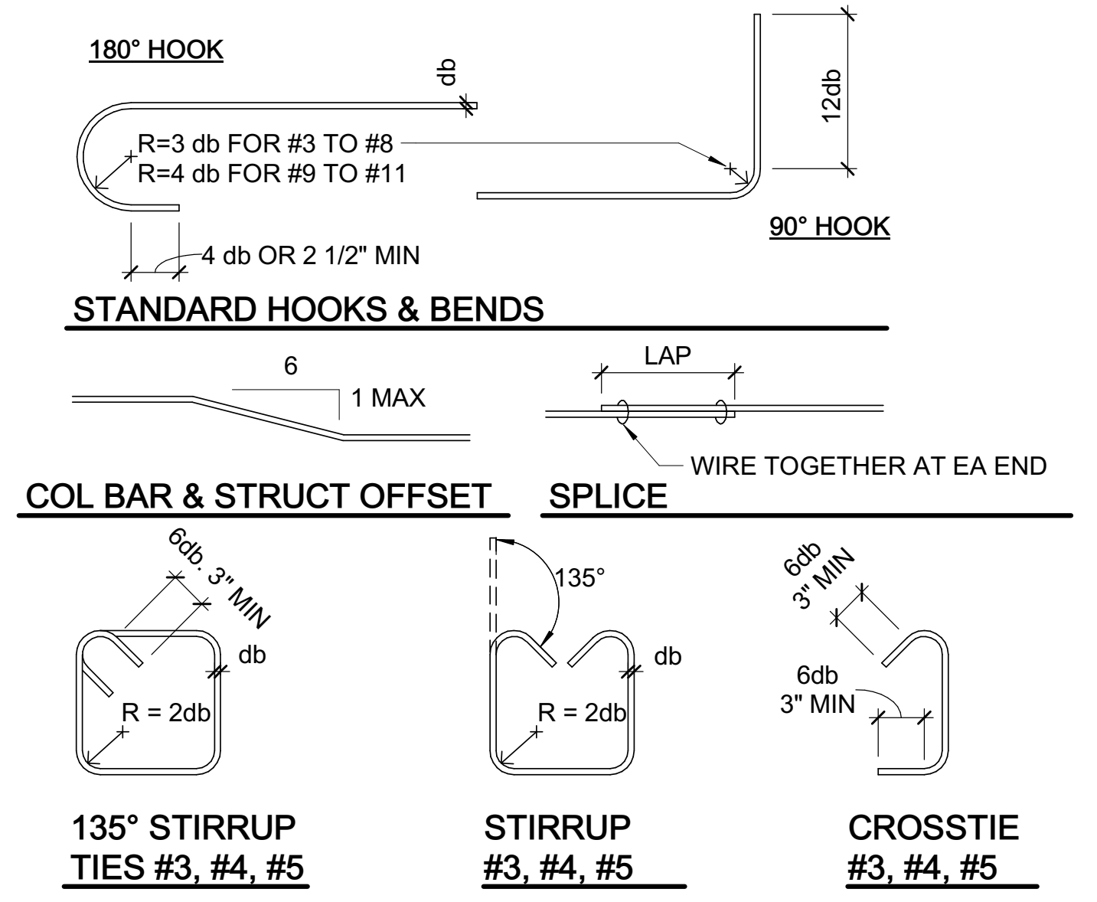
CONC COVER FOR REINF STL - - - - - - - - - 'CLR'

CAST AGAINST EARTH OR GR - - - - - - - - 3"

EXPOSED TO EARTH (FORMED) OR WEATHER
#5 & SMALLER - - - - - - - - 1½"
#6 & LARGER - - - - - - - - 2"

NOT EXPOSED TO EARTH OR WEATHER
#5 & SMALLER - - - - - - - - 1"
#6 & LARGER, & ALL BM STIRRUPS, COL TIES & SPIRALS - - - - 1½"

ALL REINF SHALL EXTEND AS FAR AS POSSIBLE. WHERE BAR SPLICES ARE REQUIRED, BARS SHALL BE LAPPED PER SCHEDULE ABOVE UNLESS DETAILED OTHERWISE. WHERE REINF TERMINATES AT END OF MEMBER, REINF SHALL END IN A STD 90° OR 180° HK UNLESS DETAILED OTHERWISE.


180° HOOK
db
R=3 db FOR #3 TO #8
R=4 db FOR #9 TO #11
4 db OR 2 1/2" MIN
12db
90° HOOK
6
1 MAX
LAP
WIRE TOGETHER AT EA END
6db, 3" MIN
db
R = 2db
135°
db
R = 2db
6db
3" MIN
6db
3" MIN

STANDARD HOOKS & BENDS

COL BAR & STRUCT OFFSET

SPLICE

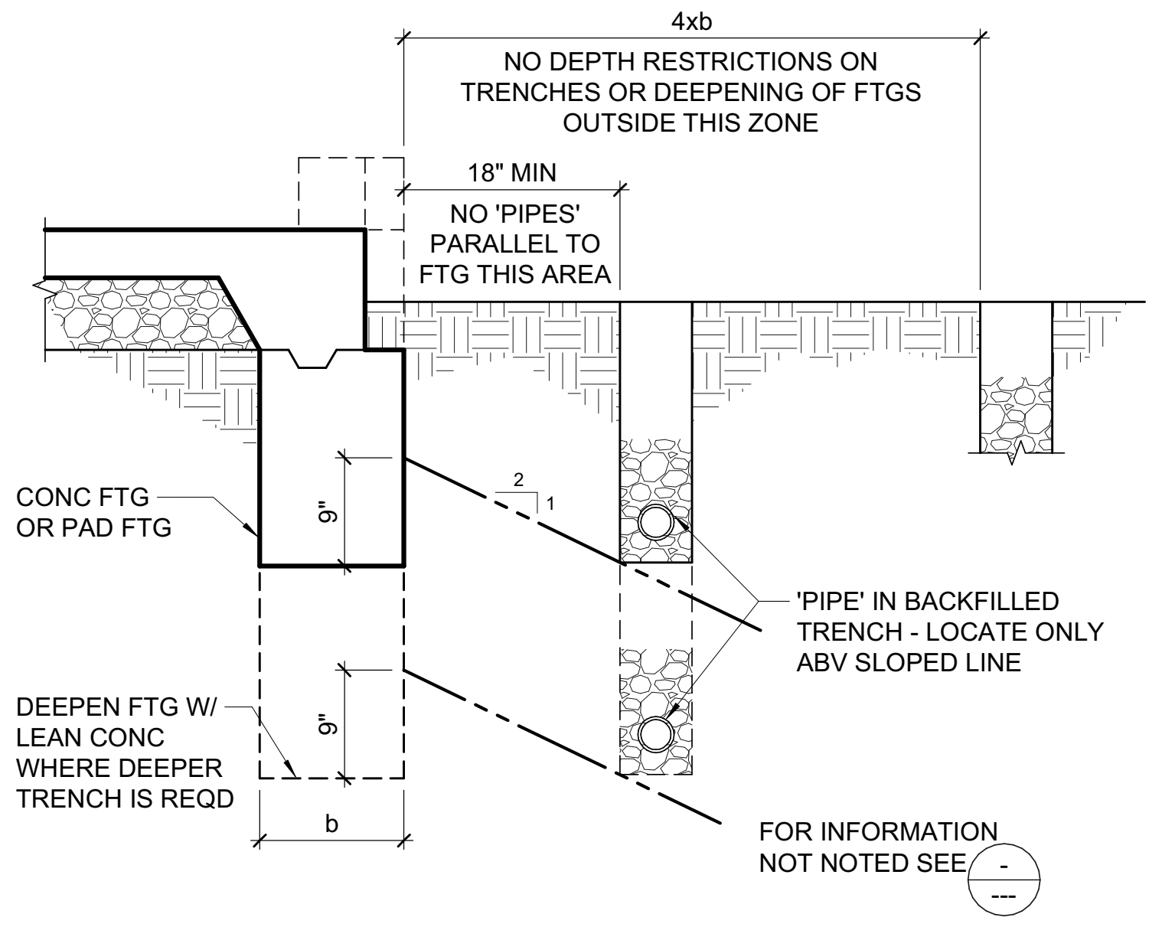
135° STIRRUP TIES #3, #4, #5

STIRRUP #3, #4, #5

CROSSTIE #3, #4, #5

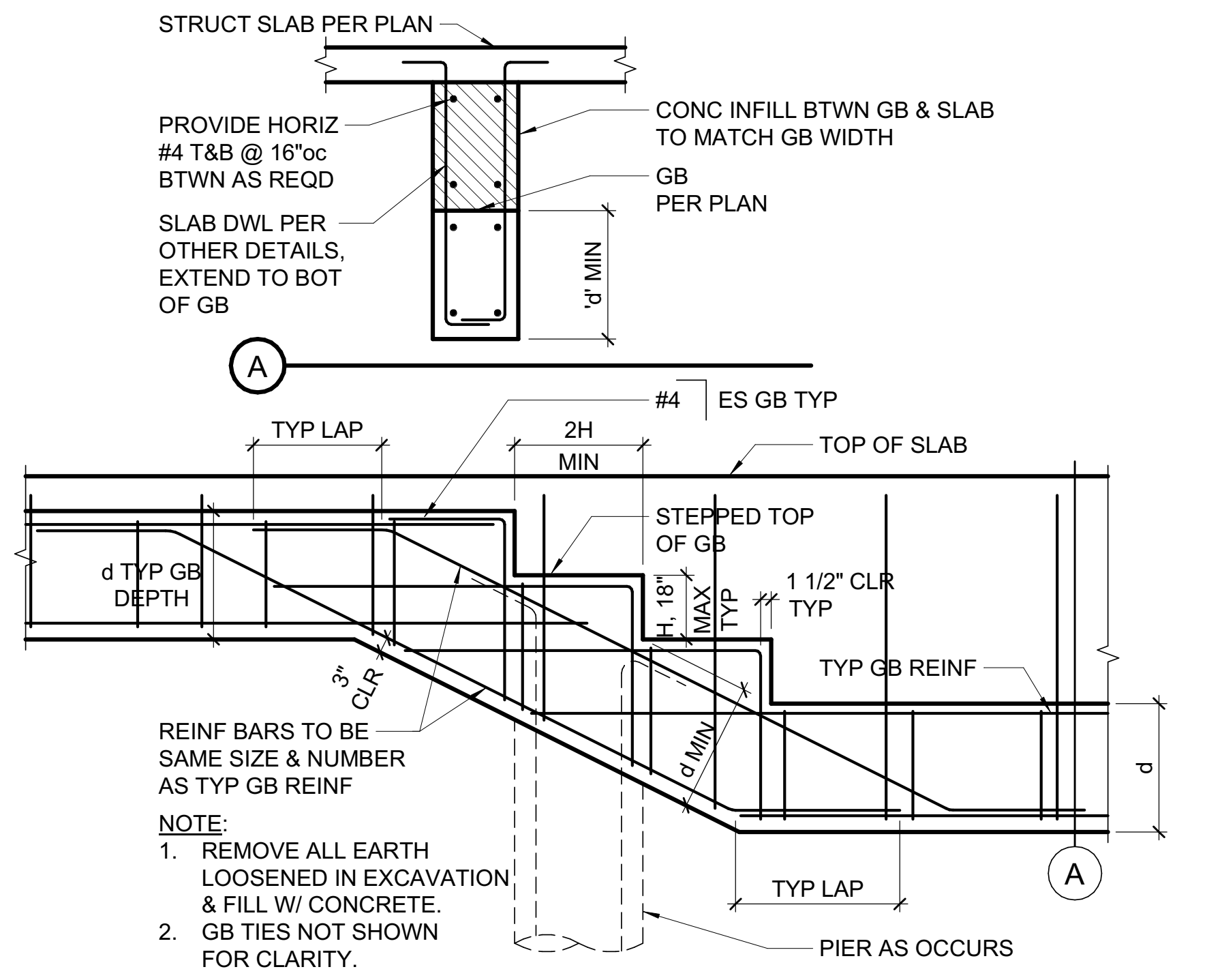
1 TYPICAL REINFORCING DETAIL (f'c = 3000psi MIN)

3/4" = 1'-0"


4xb
NO DEPTH RESTRICTIONS ON
TRENCHES OR DEEPENING OF FTGS
OUTSIDE THIS ZONE
18" MIN
NO 'PIPES'
PARALLEL TO
FTG THIS AREA
CONC FTG
OR PAD FTG
9"
2
1
9"
'PIPE' IN BACKFILLED
TRENCH - LOCATE ONLY
ABV SLOPED LINE
DEEPEN FTG W/
LEAN CONC
WHERE DEEPER
TRENCH IS REQD
b
FOR INFORMATION
NOT NOTED SEE
-
---

2 TRENCHING ADJACENT TO FOOTING

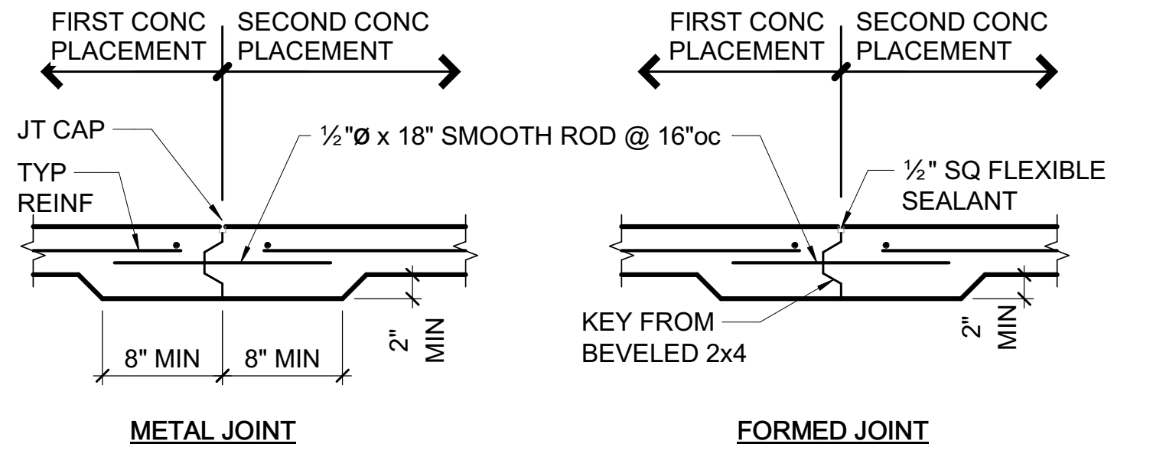
3/4" = 1'-0"


STRUCT SLAB PER PLAN
PROVIDE HORIZ
#4 T&B @ 16"oc
BTWN AS REQD
SLAB DWL PER
OTHER DETAILS,
EXTEND TO BOT
OF GB
CONC INFILL BTWN GB & SLAB
TO MATCH GB WIDTH
GB
PER PLAN
'd' MIN
A
#4
ES GB TYP
TYP LAP
2H
MIN
TOP OF SLAB
STEPPED TOP
OF GB
d TYP GB
DEPTH
H, 18"
MAX
TYP
1 1/2" CLR
TYP
TYP GB REINF
3"
CLR
d MIN
d
REINF BARS TO BE
SAME SIZE & NUMBER
AS TYP GB REINF
TYP LAP
A
PIER AS OCCURS

NOTE:
1. REMOVE ALL EARTH LOOSENED IN EXCAVATION & FILL W/ CONCRETE.
2. GB TIES NOT SHOWN FOR CLARITY.

3 SLOPED GRADE BEAM

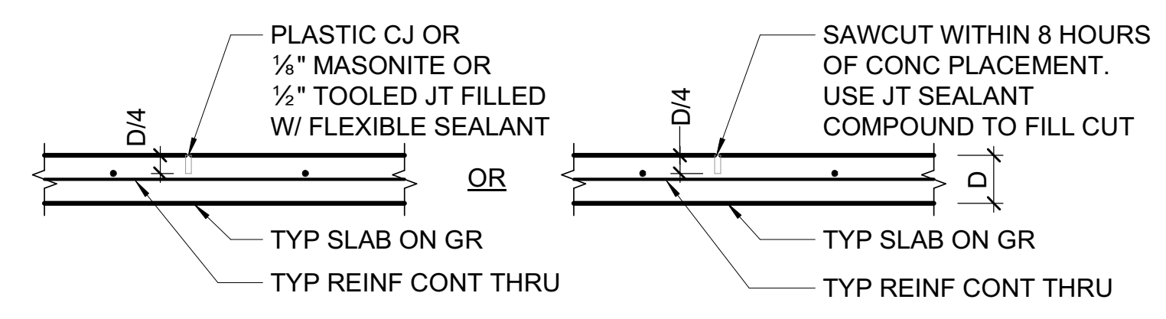
3/4" = 1'-0"


FIRST CONC
PLACEMENT
SECOND CONC
PLACEMENT
JT CAP
TYP
REINF
½"Ø x 18" SMOOTH ROD @ 16"oc
8" MIN
8" MIN
2"
MIN
FIRST CONC
PLACEMENT
SECOND CONC
PLACEMENT
½" SQ FLEXIBLE
SEALANT
KEY FROM
BEVELED 2x4
2"
MIN

METAL JOINT

FORMED JOINT

A CONSTRUCTION/DOWEL JOINT


PLASTIC CJ OR
⅛" MASONITE OR
½" TOOLED JT FILLED
W/ FLEXIBLE SEALANT
D/4
OR
TYP SLAB ON GR
TYP REINF CONT THRU
SAWCUT WITHIN 8 HOURS
OF CONC PLACEMENT.
USE JT SEALANT
COMPOUND TO FILL CUT
D/4
D
TYP SLAB ON GR
TYP REINF CONT THRU

B CONTROL JOINT

4 SLAB ON GRADE JOINTS

3/4" = 1'-0"

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PROJECT

REDHILL
COMMUNITY
SPORTS PARK
RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

DSA SUBMITTAL

FILE NUMBER 21-H2
DSA APP NUMBER 01-120489

DATE:	01.20.2023
SCALE:	3/4" = 1'-0"
ARCH PROJECT NO:	TAM22-01

SHEET TITLE

TYPICAL CONCRETE
DETAILS

SHEET NUMBER

S1.1

OF

DSA SUBMITTAL

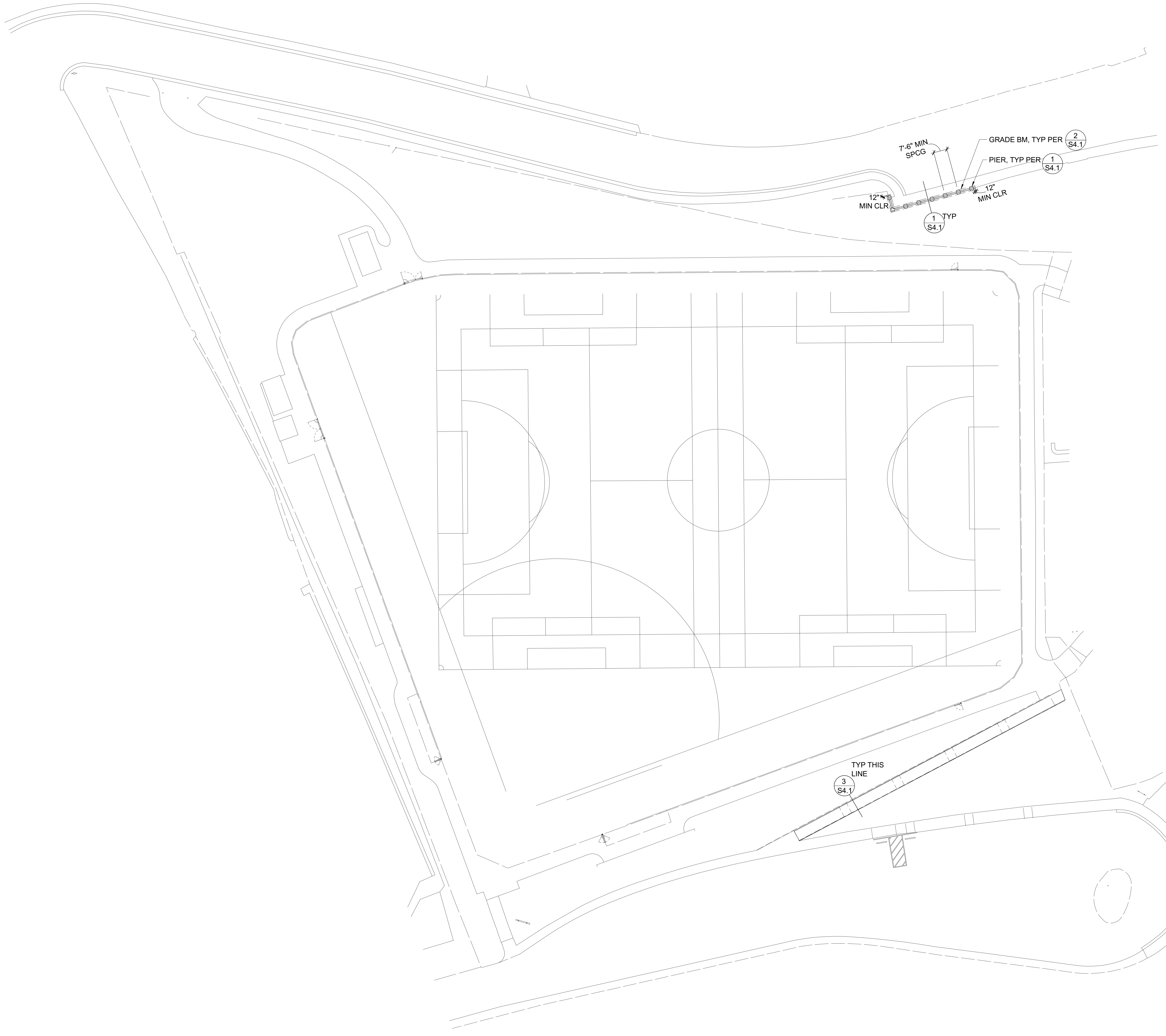
FOUNDATION PLAN NOTES:

1. REFER TO SHEETS S0.1 AND S1.1 FOR GENERAL NOTES AND TYPICAL DETAILS. THE FOLLOWING DETAIL REFERENCES ARE PROVIDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL GENERAL NOTES AND TYPICAL DETAILS NOTED ABOVE ARE APPLICABLE AND SHALL BE FOLLOWED.
2. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
3. PLUMBING AND ELECTRICAL CONDUIT AND GROUND STRAP SHALL NOT BE LAID WITHIN FOUNDATIONS. NO UTILITY PIPES OR CONDUITS SHALL BE LOCATED THRU COLUMN FOOTINGS OR FRAME FOOTINGS. NO VERTICAL OR HORIZONTAL PIPES OR CONDUITS SHALL BE LOCATED THROUGH STEEL FRAMES, STEEL COLUMNS, OR STEEL BASE PLATES. PROVIDE FURRING AND/OR THICKENED CONCRETE WHERE REQUIRED TO CLEAR UTILITY SYSTEMS. NOTIFY STRUCTURAL ENGINEER/ARCHITECT PRIOR TO ANY INSTALLATION NOT CONFORMING TO THESE DETAILS.

   PIPES PARALLEL TO FOOTINGS SHALL BE PER 2/S1.1.
4. ELEVATION OF THE TOP OF FINISHED SLAB = 0'-0", UNLESS NOTED OTHERWISE.

PLAN LEGEND

SYMBOL	REFERENCE DETAIL	DESCRIPTION
═		INDICATES CONCRETE WALL.
⌐ ─ ¬		INDICATES FOUNDATION.
▨	5/S1.1	INDICATES STEP IN ELEVATION, SEE ARCHITECTURAL DRAWINGS.
┌ ─ ┐		INDICATES EXISTING FOUNDATION.



FOUNDATION PLAN

1/32" = 1'-0"

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TAMALPAIS UNION HIGH SCHOOL DISTRICT

PROJECT

REDHILL COMMUNITY SPORTS PARK RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

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SHEET TITLE

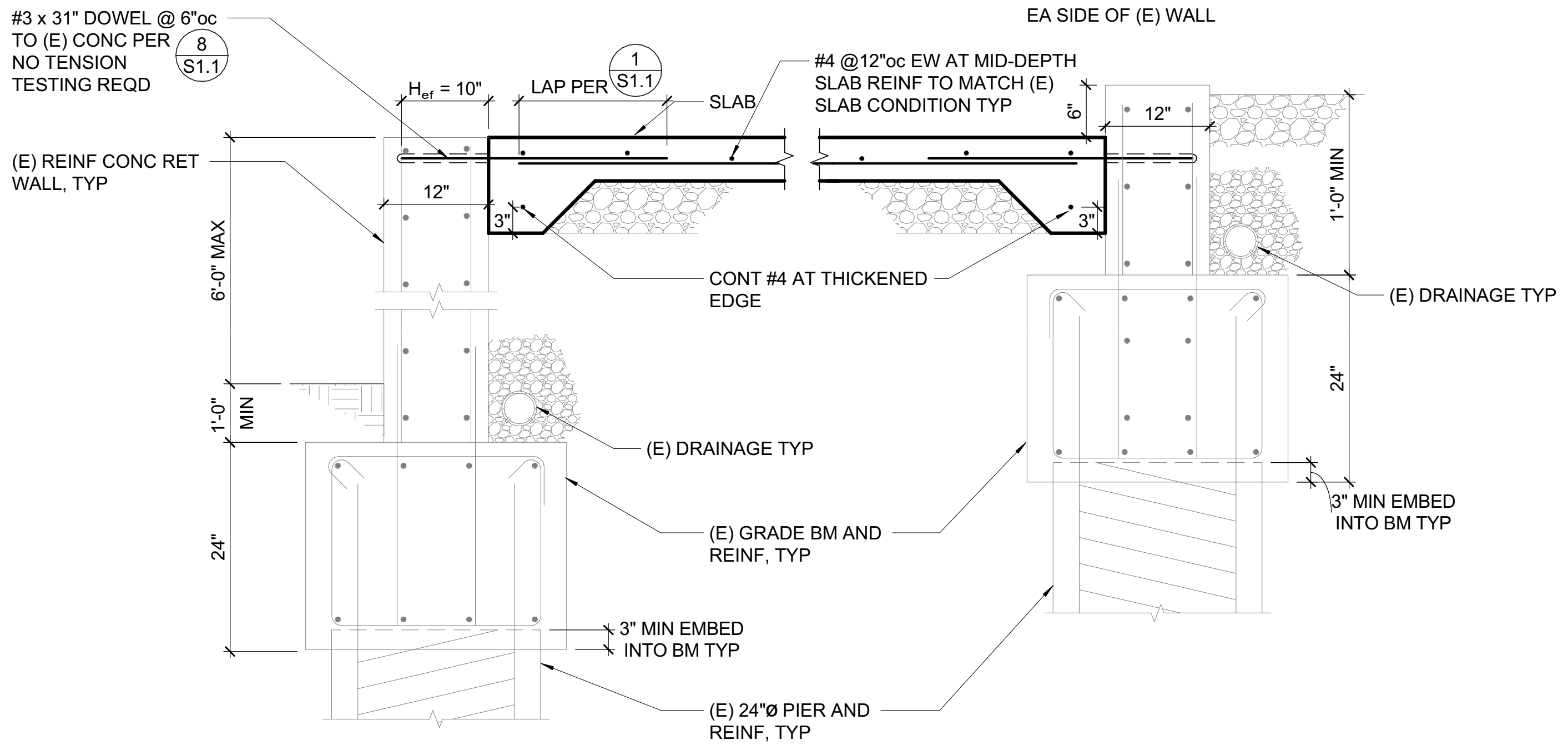
FOUNDATION PLAN

SHEET NUMBER

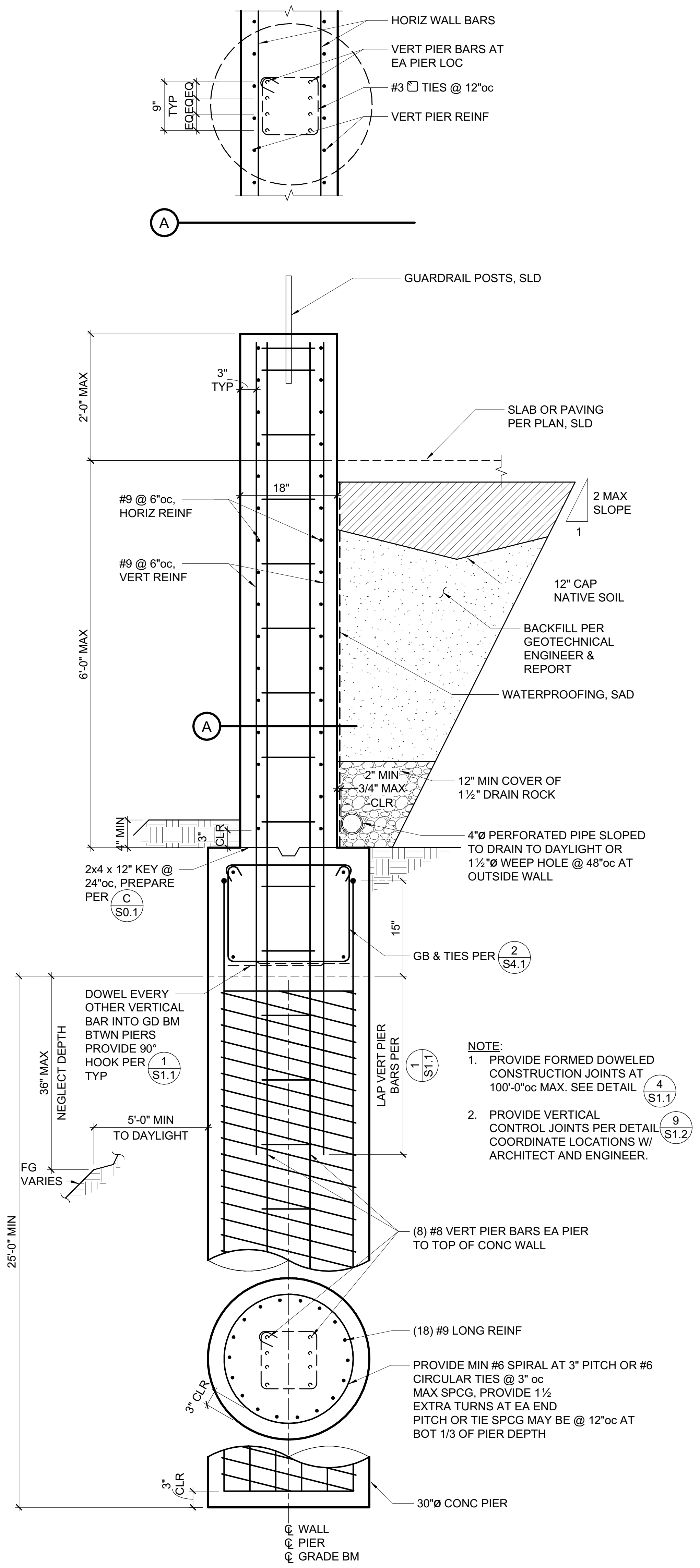
S2.1

OF

NOTES:
1. NO ALTERATION TO GRADING EA SIDE OF (E) WALL

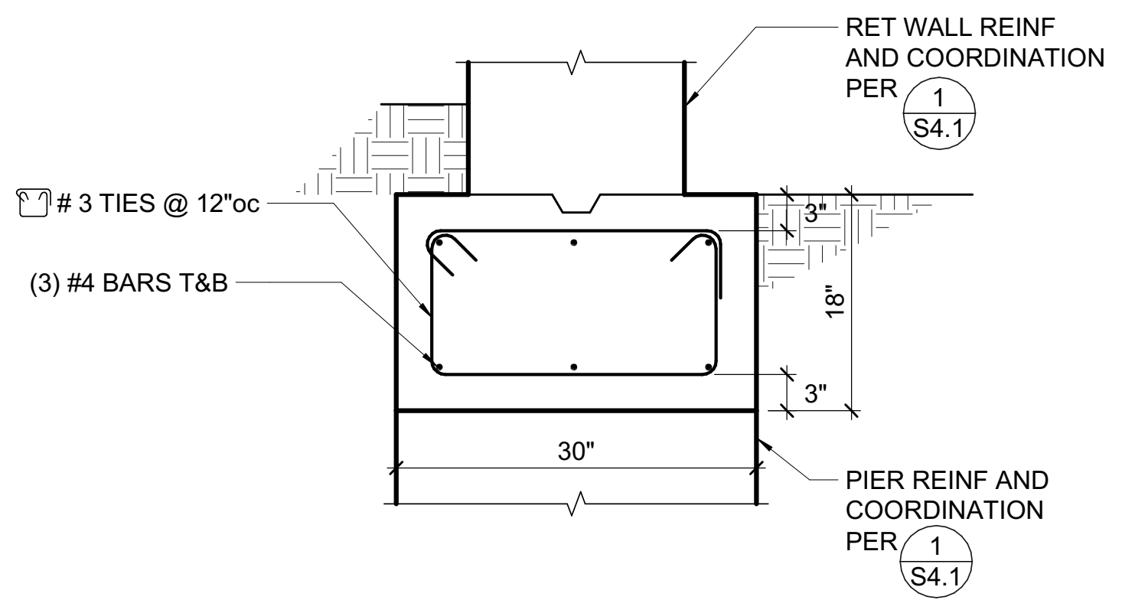

#3 x 31" DOWEL @ 6"oc
TO (E) CONC PER 8/S1.1
NO TENSION
TESTING REQD
H_{ef} = 10"
LAP PER 1/S1.1
SLAB
#4 @12"oc EW AT MID-DEPTH
SLAB REINF TO MATCH (E)
SLAB CONDITION TYP
(E) REINF CONC RET
WALL, TYP
12"
3"
6"
6'-0" MAX
1'-0" MIN
24"
CONT #4 AT THICKENED
EDGE
(E) DRAINAGE TYP
(E) DRAINAGE TYP
(E) GRADE BM AND
REINF, TYP
3" MIN EMBED
INTO BM TYP
3" MIN EMBED
INTO BM TYP
(E) 24"Ø PIER AND
REINF, TYP

③ NEW SLAB TO EXISTING FOOTING
3/4" = 1'-0"


HORIZ WALL BARS
VERT PIER BARS AT
EA PIER LOC
#3 TIES @ 12"oc
VERT PIER REINF
9"
TYP
EQ EQ EQ
A
GUARDRAIL POSTS, SLD
3"
TYP
2'-0" MAX
SLAB OR PAVING
PER PLAN, SLD
18"
2 MAX
SLOPE
1
#9 @ 6"oc,
HORIZ REINF
#9 @ 6"oc,
VERT REINF
12" CAP
NATIVE SOIL
BACKFILL PER
GEOTECHNICAL
ENGINEER &
REPORT
6'-0" MAX
WATERPROOFING, SAD
A
2" MIN
3/4" MAX
CLR
12" MIN COVER OF
1½" DRAIN ROCK
4" MIN
3" CLR
4"Ø PERFORATED PIPE SLOPED
TO DRAIN TO DAYLIGHT OR
1½"Ø WEEP HOLE @ 48"oc AT
OUTSIDE WALL
2x4 x 12" KEY @
24"oc, PREPARE
PER C/S0.1
15"
GB & TIES PER 2/S4.1
DOWEL EVERY
OTHER VERTICAL
BAR INTO GD BM
BTWN PIERS
PROVIDE 90°
HOOK PER 1/S1.1
TYP
36" MAX
NEGLECT DEPTH
LAP VERT PIER
BARS PER 1/S1.1
5'-0" MIN
TO DAYLIGHT
FG
VARIES
25'-0" MIN
(8) #8 VERT PIER BARS EA PIER
TO TOP OF CONC WALL
(18) #9 LONG REINF
PROVIDE MIN #6 SPIRAL AT 3" PITCH OR #6
CIRCULAR TIES @ 3" oc
MAX SPCG, PROVIDE 1½
EXTRA TURNS AT EA END
PITCH OR TIE SPCG MAY BE @ 12"oc AT
BOT 1/3 OF PIER DEPTH
3" CLR
3" CLR
30"Ø CONC PIER
℄ WALL
℄ PIER
℄ GRADE BM

NOTE:
1. PROVIDE FORMED DOWELED CONSTRUCTION JOINTS AT 100'-0"oc MAX. SEE DETAIL 4/S1.1
2. PROVIDE VERTICAL CONTROL JOINTS PER DETAIL 9/S1.2 COORDINATE LOCATIONS W/ ARCHITECT AND ENGINEER.

① RETAINING WALL
3/4" = 1'-0"


RET WALL REINF
AND COORDINATION
PER 1/S4.1
# 3 TIES @ 12"oc
(3) #4 BARS T&B
3"
18"
3"
30"
PIER REINF AND
COORDINATION
PER 1/S4.1

② GRADE BEAM
3/4" = 1'-0"

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STAMP

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STAMP

OWNER

TAMALPAIS UNION
HIGH SCHOOL
DISTRICT

PROJECT

REDHILL
COMMUNITY
SPORTS PARK
RENOVATION
100 SHAW DRIVE
SAN ANSELMO, CALIFORNIA 94960

CONTEXT MAP

#	DESCRIPTION	DATE

DSA SUBMITTAL

FILE NUMBER 21-H2
DSA APP NUMBER 01-120489

DATE: 01.20.2023
SCALE: 3/4" = 1'-0"
ARCH PROJECT NO: TAM22-01

SHEET TITLE

FOUNDATION
DETAILS

SHEET NUMBER

S4.1

OF